URBAN CROSSROADS

41 Corporate Park | Suite 300 | Irvine, CA 92606 | (949) 660-1994
www.urbanXroads.com

July 29, 2013

Mr. John Criste
TERRA NOVA PLANNING & RESEARCH, INC.
42635 Melanie Place
Palm Desert, CA 92211

Subject: Monterey Avenue Improvement Project Traffic Impact Analysis (Revised)

Dear Mr. Criste:

INTRODUCTION

Urban Crossroads, Inc. is pleased to provide this revised letter documenting our analysis of the proposed Monterey Avenue Improvement Project. The report has been revised based on input from the City of Rancho Mirage staff and now includes additional truck traffic volume data and Opening Year analysis. The Monterey Avenue Improvement Project proposes to widen Monterey Avenue to its ultimate width as a six (6) lane primary arterial roadway by constructing an additional southbound lane from south of Market Place Way to south of A Street. The project area is generally depicted on Exhibit A. This "missing link" widening will provide a continuous 3rd southbound lane from the I-10 Freeway to south of Country Club Drive. Exhibit A illustrates the location of the project area. Analysis of Existing, Opening Year (2014), and Long Range (2035) conditions has been conducted to evaluate the potential impact of the project on traffic operations within the affected area of Monterey Avenue corridor and identify improvements necessary to provide acceptable traffic operations.

The proposed widening of the Monterey Avenue is necessary to accommodate the growth in traffic that is contemplated as the adjacent Cities of Rancho Mirage and Palm Desert continue to experience ongoing growth in accordance with their respective General Plan Land Use Elements as reflected in regional projections of long term growth.

The Monterey Avenue widening project is consistent with the City of Rancho Mirage and City of Palm Desert General Plan Circulation Elements. Both Opening Year (2014) and Long Range (2035) with and without the project (Monterey Avenue roadway widening) conditions will be evaluated in this traffic analysis. The study objectives include (1) documentation of existing traffic conditions; (2) evaluation of traffic conditions for Opening Year (2014) conditions; and (3) evaluation of traffic conditions for Long Range (2035) conditions.

PROJECT DESCRIPTION

The project is proposed to widen Monterey Avenue to a consistent 6 (through) lane divided cross-section throughout the project area (and beyond). This "missing link" widening will provide a continuous 3rd southbound lane from the I-10 Freeway to south of Country Club Drive. The intent of the project is to limit improvements to the west side of Monterey Avenue (constructing a third travel lane, along with associated curb, gutter, and sidewalks).

STUDY AREA

Exhibit B illustrates the project location and traffic analysis study area. Monterey Avenue is a major sub-regional corridor that serves traffic traveling to and from the Interstate 10 (I-10) Freeway, which is located just north of Dinah Shore Drive. South of Highway 111, Monterey Avenue becomes State Route 74 (SR-74), providing access to the San Jacinto mountains, as well as access to other destinations in Riverside and San Diego Counties.

The study area includes the following intersection:

ID	Intersection Location	Jurisdiction
1	Monterey Avenue / Dick Kelly Drive	City of Rancho Mirage and Palm Desert

TRAFFIC OPERATIONS ANALYSIS METHODOLOGIES

This section presents the methodologies for the analyses prepared in this assessment, which includes overall methodologies used to develop future traffic volume forecasts and explicit traffic operations analysis methodologies.

Overall Analysis Methodology

Existing conditions data has been collected / compiled explicitly for this work effort. Peak hour turning movement counts were collected for the study area intersection in November, 2012. Daily traffic volume data was compiled from available resources, specifically the Coachella Valley Association of Governments 2013 annual traffic census, or estimated based on the peak hour data.

The long range traffic volumes have been obtained from a combination of sources, including the Riverside Transportation Analysis Model (RIVTAM) and forecasts from the previously published report Monterey Commons Retail Development Traffic Impact Analysis (Revised), Urban Crossroads, Inc. 2008. The volumes contained in the Monterey Commons project traffic study report have been derived from the Coachella Valley SubArea Transportation Model Study CVSATM (Coachella Valley Subarea Applications

Traffic Model). The RIVTAM forecasts within the study area indicated somewhat less growth in through traffic compared to the volumes presented in the previously published Monterey Commons project traffic study report. However, the RIVTAM roadway network is not sufficiently detailed to show the traffic using the west leg of the intersection (Ginger Rogers Road) under 2035 conditions. Therefore, the previously published forecasts were used to determine forecast traffic movements to and from Ginger Rogers Road and Dick Kelly Drive, while the previously published through traffic volumes were adjusted based on review of the RIVTAM forecasts to ensure greater consistency with the forecasts being used for projects throughout the Coachella Valley (and Riverside County).

Opening Year (2014) traffic volumes were estimated based on straight line interpolation between the existing (2012) and Long Range (2035) traffic volumes. Since the Opening Year (2014) data is dependent on the Long Range (2035) data, the Opening Year volumes and analysis are generally presented subsequent to the Long Range (2035) volumes and analysis.

Level of Service

Traffic operations of roadway facilities are described using the term "Level of Service" (LOS). LOS is a qualitative description of traffic flow based on several factors such as speed, travel time, delay, and freedom to maneuver. Six levels are typically defined ranging from LOS “A”, representing completely free-flow conditions, to LOS “F”, representing breakdown in flow resulting in stop-and-go conditions. LOS “E” represents operations at or near capacity, an unstable level where vehicles are operating with the minimum spacing necessary to maintain uniform flow.

Intersection Capacity Analysis Methodology

Intersection capacity analyses are performed using the 2000 Highway Capacity Manual (HCM) methodology. The computer software program, Synchro, has been utilized to calculate the intersection delay values and resulting Levels of Service (LOS). Synchro is a traffic signal progression analysis software that is capable of performing intersection delay analyses using various methodologies, including the HCM method.

The HCM defines Level of Service (LOS) as a qualitative measure which describes operational conditions within a traffic stream, generally in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. The criteria used to evaluate LOS conditions vary based on the type of roadway and whether the traffic flow is considered interrupted or uninterrupted.

The definitions of LOS for interrupted traffic flow (flow restrained by the existence of traffic signals and other traffic control devices) differ slightly depending on the type of traffic control. The LOS is typically dependent on the quality of traffic flow at the intersections along a roadway. The *Highway Capacity Manual* (HCM) (Transportation Research Board 2000) methodology expresses the LOS at an

intersection in terms of delay time for the various intersection approaches. The HCM uses different procedures depending on the type of intersection control.

The intersection LOS analysis in this report is based on the traffic volumes observed during the peak hour conditions using peak period traffic count data collected November 8, 2012 (Thursday). The following peak hours were selected for analysis:

- Weekday AM Peak Hour (peak hour between 7:00 AM and 9:00 AM)
- Weekday PM Peak Hour (peak hour between 4:00 PM and 6:00 PM)

For Signalized intersections, the City of Rancho Mirage and City of Palm Desert requires signalized intersection operations analysis based on the methodology described in Chapter 16 of the 2000 HCM. Intersection LOS operations are based on an intersection's average control delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. For signalized intersections LOS is directly related to the average control delay per vehicle and is correlated to a LOS designation as described in Table 1.

Table 1 Signalized Intersection LOS Thresholds

Level of Service	Description	Average Control Delay (Seconds)
A	Operations with very low delay occurring with favorable progression and/or short cycle length.	0 to 10.00
B	Operations with low delay occurring with good progression and/or short cycle lengths.	10.01 to 20.00
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.01 to 35.00
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	35.01 to 55.00
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	55.01 to 80.00
F	Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths	80.01 and up

Source: HCM 2000, Chapter 16

The peak hour traffic volumes have been adjusted using a peak hour factor (PHF) to reflect peak 15 minute volumes. Common practice for LOS analysis is to use a peak 15-minute rate of flow. However, flow rates are typically expressed in vehicles per hour. The PHF is the relationship between the peak 15-minute flow rate and the full hourly volume (e.g. PHF = [Hourly Volume] / [4 x Peak 15-minute Flow Rate]). The use of a 15-minute PHF produces a more conservative analysis as compared to analyzing vehicles per hour. Existing PHFs have been used for Existing (2012) and Opening Year (2014) traffic conditions. Long Range (2035) conditions have been evaluated using a PHF of 1.0.

Intersection Queuing Analysis Methodology

Traffic signal progression analysis has been conducted to evaluate vehicular queuing and stacking length requirements by considering the signal timing and physical spacing of intersections. The progression results have been based on the output from the Synchro software program.

The Synchro software program calculates the 95th Percentile Queue based on the Average Queue plus a 1.65 standard deviation. The 95th Percentile Queue, which may not ever be observed, is simply based on statistical calculations. In many cases, the 95th Percentile Queue will not be experienced due to upstream metering. If the intersection is at or near capacity, the 50th Percentile Queue (or the Average Queue) represents the maximum queue likely to be experienced on a typical cycle.

Definition of Deficiency

The definition of an intersection deficiency has been obtained from City of Rancho Mirage and the City of Palm Desert policies. The City of Rancho Mirage requires peak hour intersection operation of LOS "D" or better. The City of Palm Desert General Plan Circulation Element states that peak hour intersection operation of LOS “C” or better is generally acceptable. However, as traffic volumes in the City increase, LOS “C” represents a standard that is progressively more difficult and costly to achieve in urban areas. For peak operating periods, LOS “D” and/or a maximum volume to capacity ratio of 0.90 is provisionally considered the generally acceptable service level. The City of Palm Desert’s LOS “C” goal should only be exceeded where maximum feasible intersection improvements have been implemented.

EXISTING TRAFFIC CONDITIONS

Exhibit C identifies the existing roadway through lanes for the study area roadways and the intersection controls at existing intersection analysis location. As shown on Exhibit C, Monterey Avenue is a six (6) lane divided roadway north of Market Place Way, a five (5) lane divided roadway between Market Place Way and A Street (located south of Dick Kelly Drive), with three northbound through lanes and two southbound through lanes along this segment, and a six (6) lane divided roadway north of Gerald Ford Drive. The posted speed limit along Monterey Avenue within the study area is 55 miles per hour (mph).

Exhibit D illustrates the existing curb conditions along Monterey Avenue. As shown, the curb conditions along the west side of Monterey Avenue vary from paved sidewalks to unpaved / dirt conditions. The areas lacking sidewalks will be improved as part of the proposed project.

Existing Traffic Volumes

Existing traffic counts were collected to establish baseline conditions in the study area and are also used as an input to the traffic volume forecasting process. Data was collected during the most recent peak season. The peak hour data was collected in November of 2012 and provides the basis for the detailed operations analysis contained in this report. The daily traffic volume data was obtained from the Coachella Valley Association of Governments (CVAG) and was collected as part of the CVAG annual traffic census. Exhibit E illustrates the existing average daily traffic (ADT) and AM/PM peak hour intersection traffic volumes for the study area. The existing ADT volumes presented on Exhibit E are based upon the CVAG 2013 Traffic Census Report and/or the peak hour turning movement traffic data collected by Urban Crossroads, Inc. using the following formula for each intersection leg:

[AM + PM Peak Hour Volume]/(0.061 + 0.078) = Daily Leg Volume

In the above formula, the constants of 6.10% and 7.80% are calculated AM and PM Peak Hour to ADT ratios based on the actual peak hour collected and daily traffic count data from CVAG. Both AM and PM peak hour volumes are included in the calculation to ensure that traffic generators such as schools that are primarily active during the AM peak hour are accurately reflected in the daily traffic estimates. Attachment "A" contains the traffic count data and peak hour to daily traffic relationship calculations.

The AM peak hour traffic volumes were determined by counting the two hour period between 7:00 to 9:00 in the morning. Similarly, the PM peak hour traffic volumes were identified by counting the two hour period from 4:00 to 6:00 in the evening. The count includes the vehicle classification as shown below:

- passenger cars (1 PCE)
- 2 axle trucks/buses/recreational vehicles (1.5 PCE)
- 3 axle trucks (2 PCE)
- 4 or more axle trucks (3 PCE)

The traffic count data has been reviewed and indicates that the truck traffic percentages remain fairly constant between the AM and PM peak periods, with trucks comprising between 2 and 4% of the overall traffic in the study area. The daily truck percentages and volumes have been calculated using the slightly higher / more conservative AM peak period data (approximately 4% trucks). The AM peak period data indicates that large 2-axle vehicles (trucks, buses, and recreational vehicles) comprise 2% of the overall traffic, while 3 axle and 4+ axle trucks each constitute 1% of the overall traffic in the study area. The

overall existing count volumes illustrated on the exhibits and used for the analysis for the study are calculated passenger car equivalent (PCE) volumes. The PCE factor for each classification is shown on the list above. Explicit existing conditions peak hour factors have been calculated using the data collected for this effort as well.

As indicated on Exhibit E, existing daily traffic volumes on Monterey Avenue range from 29,900 to 32,500 vehicles per day (VPD). The daily traffic volume on Dick Kelly Drive is approximately 3,800 VPD. Exhibit E also presents the existing truck volume and percentage of the total traffic.

For the peak hour traffic volumes, the general trend is higher southbound volumes on Monterey Avenue in the morning peak hour, mirrored by a higher northbound volume in the evening peak hour of traffic.

General Plan Circulation Network

Both the City of Rancho Mirage and the City of Palm Desert General Plan Circulation Element planned roadway systems are directly applicable within the study area. In addition the overall County of Riverside planned roadway system addresses the planned roadway system within the study area.

Exhibits F and G depict the General Plan Circulation Element roadway designations and planned cross-sections, respectively, for the City of Rancho Mirage. Per the City of Rancho Mirage General Plan Circulation Element, Monterey Avenue is planned as a 6-lane divided Major Arterial within the study area, with a 106 foot curb to curb cross-section in an overall 120 foot right-of-way. The City of Rancho Mirage General Plan Circulation Element does not include a designation for the extension of Dick Kelly Drive (identified as Ginger Rogers Road in the previously published traffic study report for the Monterey Commons project).

Exhibits H and I present the General Plan Circulation Element roadway designations and planned cross-sections, respectively, for the City of Palm Desert. The City of Palm Desert identifies Monterey Avenue as an Arterial Street throughout the study area. This designation again provides for a basic 6-lane divided cross-section, with a 102 foot curb to curb cross-section in an overall 150 wide right of way. The curb to curb width is similar to the City of Rancho Mirage width (4 feet difference total or 2 feet on each side of the roadway). The City of Palm Desert cross-section includes a substantially larger parkway area adjacent to the roadway proper.

Dick Kelly Drive is also shown on the City of Palm Desert General Plan Circulation Element, which identifies Dick Kelly Drive as a Secondary Street. The Secondary Street designation provides for a 60 feet curb to curb width within an overall right of way of 108 feet. The curb to curb width can accommodate two through lanes in each direction, with width for a left turn lane at intersections.

The County of Riverside General Plan represents the overall plan for Riverside County, including both unincorporated areas and incorporated local jurisdictions such as the Cities of Rancho Mirage and Palm Desert. The countywide plan has most recently been updated in the context of the Riverside County Integrated Project (RCIP). The purpose of the RCIP is to integrate the processes of planning land use, transportation improvements and preserving habitat for endangered species. A primary objective of the RCIP is to accommodate projected population growth within Riverside County by focusing development within areas that will be readily accessible, will provide a good quality of life for future residents, and will minimize environmental and community impacts, including impacts to sensitive habitats and endangered species.

The most current RCIP network is depicted on Exhibit J and the RCIP cross-sections are illustrated on Exhibit K. Monterey Avenue is designated as an Urban Arterial from Dinah Shore Drive to Gerald Ford Drive. An Urban Arterial features a 110 foot curb to curb cross-section within an overall right of way of 152 feet and provides a 6-lane divided roadway. This is slightly wider than the City standards, however the number of through travel lanes (6 through lanes) is consistent for all three agencies.

The City of Rancho Mirage and the City of Palm Desert designations for Monterey Avenue differ in terms of minor details, but provide for the same basic roadway cross-section of a 6-lane divided facility. The overall County of Riverside RCIP plan provides for a substantially narrower cross-section south of Gerald Ford Drive. The narrower cross-section of only 86 feet curb to curb (compared to the 100 foot plus cross-sections identified by both the City of Rancho Mirage and the City of Palm Desert) can serve as a 6-lane divided section, but lane widths are standard at best and little opportunity for additional turn lanes is available at intersections. It is therefore recommended that the City of Rancho Mirage and the City of Palm Desert coordinate with the County of Riverside to ensure that the County plans be updated to reflect an Urban Arterial, which is more consistent with the City designations.

EXISTING CONDITIONS TRAFFIC OPERATIONS ANALYSIS

Intersection Analysis

The Intersection traffic operations analysis results are summarized in Table 2 for existing traffic conditions, based on the existing intersection lane configuration. Intersection delay analysis calculation worksheets for existing traffic conditions are included in Attachment "B". The study area intersection is currently operating at an acceptable level of service (Level of Service "B" or better).

Queuing Analysis

Table 3 summarizes the estimated 50th and 95th percentile (%) queues, respectively, under existing conditions for the AM and PM peak hours of traffic on the roadway system. The 50th % queue length represents the average queue expected throughout the peak hour, while the 95th % queue length

represents a peak or desirable design queue length that would be expected 5% of the time. The queuing analysis worksheets are included in Attachment "C". As shown on Table 3, adequate storage is provided to accommodate vehicle queues under existing traffic conditions.

LONG RANGE (2035) CONDITIONS TRAFFIC VOLUMES

The long range traffic volumes have been obtained from a combination of sources, including the Riverside Transportation Analysis Model (RIVTAM) and forecasts from the previously published report Monterey Commons Retail Development Traffic Impact Analysis (Revised), Urban Crossroads, Inc. 2008. The volumes contained in the Monterey Commons project traffic study report have been derived from the Coachella Valley SubArea Transportation Model Study CVSATM (Coachella Valley Subarea Applications Traffic Model). The RIVTAM forecasts within the study area indicated somewhat less growth in through traffic compared to the volumes presented in the previously published Monterey Commons project traffic study report. However, the RIVTAM roadway network is not sufficiently detailed to show the traffic using the west leg of the intersection (Ginger Rogers Road) under 2035 conditions. Therefore, the previously published forecasts were generally used to determine forecast traffic movements to and from Ginger Rogers Road and Dick Kelly Drive, while the previously published through traffic volumes were adjusted based on review of the RIVTAM forecasts to ensure consistency with the forecasts being used for projects throughout the Coachella Valley (and Riverside County).

The initial model output data has been refined based on the actual traffic counts and other recently prepared traffic volume forecasts available for the study area. The peak hour directional roadway segment volume forecasts have been determined based on the procedures and guidelines of the National Cooperative Highway Research Program Circular 255 (NCHRP-255). The specific approach is based on the City of Rancho Mirage traffic model Long Range (2035) peak hour volumes development procedure. The model output of peak hour intersection approach/departure data is a necessary input to this approach. The existing traffic volumes serve as the starting point for the refinement process. The final Long Range (2035) traffic volumes have also been checked against previously published interim year forecasts to ensure that no negative growth compared to published interim year forecasts occurs. Attachment "D" includes the growth reasonableness review worksheets documenting the traffic growth for each individual movement and each intersection leg inbound and outbound volumes for peak hour and daily conditions.

Exhibit L illustrates the Long Range (2035) average daily traffic (ADT) and AM/PM peak hour intersection traffic volumes for the study area. Projected truck traffic percentages and volumes are also presented on Exhibit L. Substantial increases in traffic are anticipated throughout the study area. Consistent with the previously published report for the Monterey Commons project, an additional (west) leg of the intersection is assumed to be built in conjunction with adjacent development. Growth in traffic on

Monterey Avenue ranges between 64% and 78% in the AM / PM peak hours, with even higher growth anticipated for the side street traffic. The higher side street growth is reasonable, given the amount of vacant land adjacent to Dick Kelly Drive and future Ginger Rogers Road.

LONG RANGE (2035) TRAFFIC OPERATIONS ANALYSIS

Intersection Analysis

The intersection traffic operations analysis results are summarized in Table 4 for Long Range (2035) without project widening and with project widening traffic conditions.

For Long Range (2035) without widening conditions, the study area intersection is anticipated to operate at an unacceptable level of service (LOS "E") during the PM peak hour. Intersection delay analysis calculation worksheets are included in Attachment "E" for Long Range (2035) without widening conditions. The west leg of the intersection (eastbound approach and westbound departure lanes), along with a southbound right turn lane, and any necessary left turn lanes on Monterey Avenue (northbound left and southbound left) will be further analyzed and built in conjunction with development on the currently vacant land west of Monterey Avenue in the vicinity of Dick Kelly Drive. These improvements are not a part of the currently proposed project and are expected to be mitigated and constructed by the future developer when and if development occurs on the adjacent property.

For Long Range (2035) with project (Monterey Avenue widening) conditions, addition of the 3rd southbound lane will improve the PM peak hour level of service from LOS "E" to LOS "D", decreasing the PM peak hour delay by 9 seconds per vehicle. Intersection delay analysis calculation worksheets are included in Attachment "F" for Long Range (2035) with widening conditions.

Queuing Analysis

For Long Range (2035) Without Widening conditions, the estimated 50th and 95th percentile (%) queues, respectively, for the AM and PM peak hours of traffic on the roadway system are summarized in Table 5. The queuing analysis worksheets are included in Attachment "G".

As shown on Table 5, no 50th percentile queuing issue is anticipated. This indicates that no queue storage issue will be observed at least half the time. However, review of the 95th percentile queuing calculations in Table 5 suggests that occasional 95th percentile queuing issues would occur at the intersection of Monterey Avenue at Dick Kelly Drive under Long Range (2035) Without Widening

conditions. Potential queuing issues occur during the PM peak hour of traffic include the following turning movements:

Monterey Avenue / Dick Kelly Drive

- Northbound Left (95th Percentile)
- Southbound Left (95th Percentile)

The identified queuing issues will only occur if development of the vacant land in the vicinity of the subject intersection takes place. Any need to reconstruct the center median would be evaluated by the future developer in conjunction with such future development, and appropriate mitigation of project impacts would occur at the time of development.

For Long Range (2035) With Project (Monterey Avenue widening) conditions, the estimated 50th and 95th percentile (%) queues, respectively, for the AM and PM peak hours of traffic on the roadway system are summarized in Table 6. The queuing analysis worksheets are included in Attachment "H". As shown on Table 6, any occasional queuing issues would be reduced for Long Range (2035) With Widening conditions as a result of the proposed project (e.g., the proposed project will reduce any occasional queue storage issues at the study area intersection). The identified queuing issues will only occur if development of the vacant land in the vicinity of the subject takes place. Any need to reconstruct the center median would be evaluated by the future developer in conjunction with such future development, and appropriate mitigation of project impacts would occur at the time of development.

OPENING YEAR (2014) CONDITIONS TRAFFIC VOLUMES

The Opening Year (2014) traffic volumes have been developed using straight line interpolation between the existing (2012) conditions volumes and the Long Range (2035) traffic volumes. As no active development is occurring on the west side of Monterey Avenue, only existing movements are included for Opening Year (2014) conditions. Exhibit M illustrates the Opening Year (2014) average daily traffic (ADT) and AM/PM peak hour intersection traffic volumes for the study area. Projected truck traffic percentages and volumes are also presented on Exhibit M.

OPENING YEAR (2014) TRAFFIC OPERATIONS ANALYSIS

Intersection Analysis

The intersection traffic operations analysis results are summarized in Table 4 for Opening Year (2014) without project widening and with project widening traffic conditions. For both Opening Year (2014) without and with widening conditions, the study area intersection is anticipated to operate at acceptable

levels of service. Intersection delay analysis calculation worksheets are included in Attachment "H" for Opening Year (2014) without widening conditions. The Opening Year (2014) with widening conditions operations analysis worksheets are included in Attachment "I"

RECOMMENDATIONS / CLOSING

Based on the analysis and findings presented in the previous sections of this report, the following recommendations have been developed:

- Monterey Avenue within the project limits should be constructed as a six lane divided roadway by constructing a third southbound through lane.
- Any additional intersection improvements will only be required in conjunction with future development of vacant land in the vicinity of the proposed project. Any improvements needed to serve this future development will be evaluated by the developer and constructed as appropriate mitigation at such time as nearby development occurs.

Urban Crossroads, Inc. is pleased to provide this traffic analysis letter report for your use. If you have any questions, please contact us at (949) 660-1994.

Respectfully submitted,

URBAN CROSSROADS, INC.

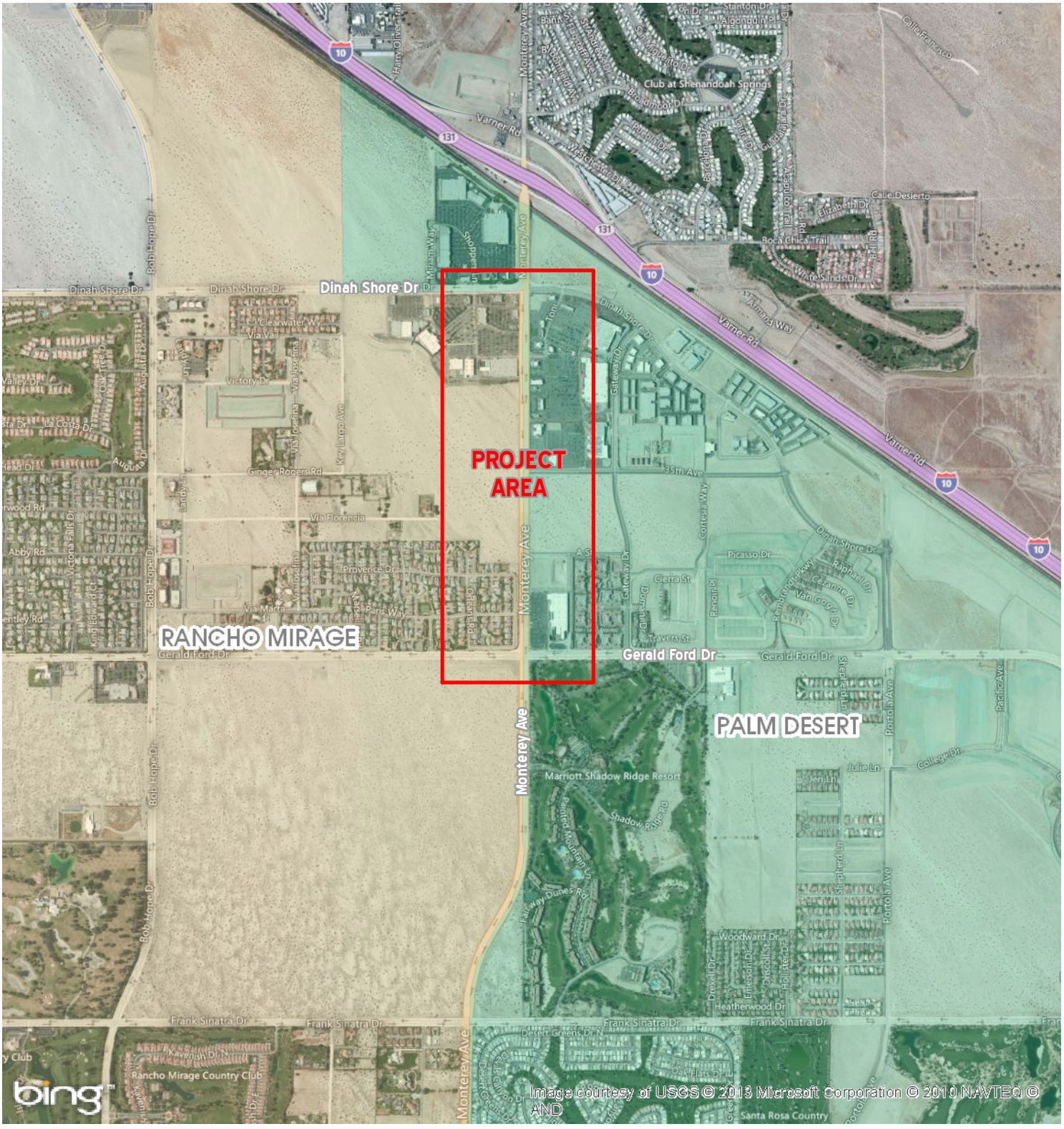
Carleton Waters, P. E.
Principal

CW:JC:rd
JN:08220-05 Ltr Report (rev2)

Attachments

EXHIBIT A

PROJECT AREA



N

Monterey Avenue Improvements Project Traffic Impact Analysis
Cities of Rancho Mirage & Palm Desert, CA (JN - 08220:projectarea.mxd)

URBAN CROSSROADS

EXHIBIT B

LOCATION MAP

LEGEND:

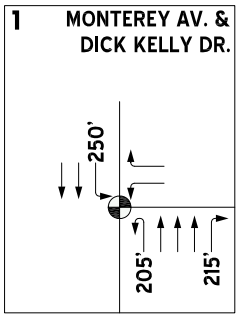
1 = INTERSECTION ANALYSIS LOCATION

= MONTEREY AVENUE WIDENING PROJECT

N

EXHIBIT C

EXISTING NUMBER OF THROUGH LANES AND INTERSECTION CONTROLS



LEGEND:

- = TRAFFIC SIGNAL
- 4 = NUMBER OF LANES
- D = DIVIDED
- 250' = POCKET LENGTH

N

EXHIBIT D

EXISTING MONTEREY AVENUE CURB CONDITIONS

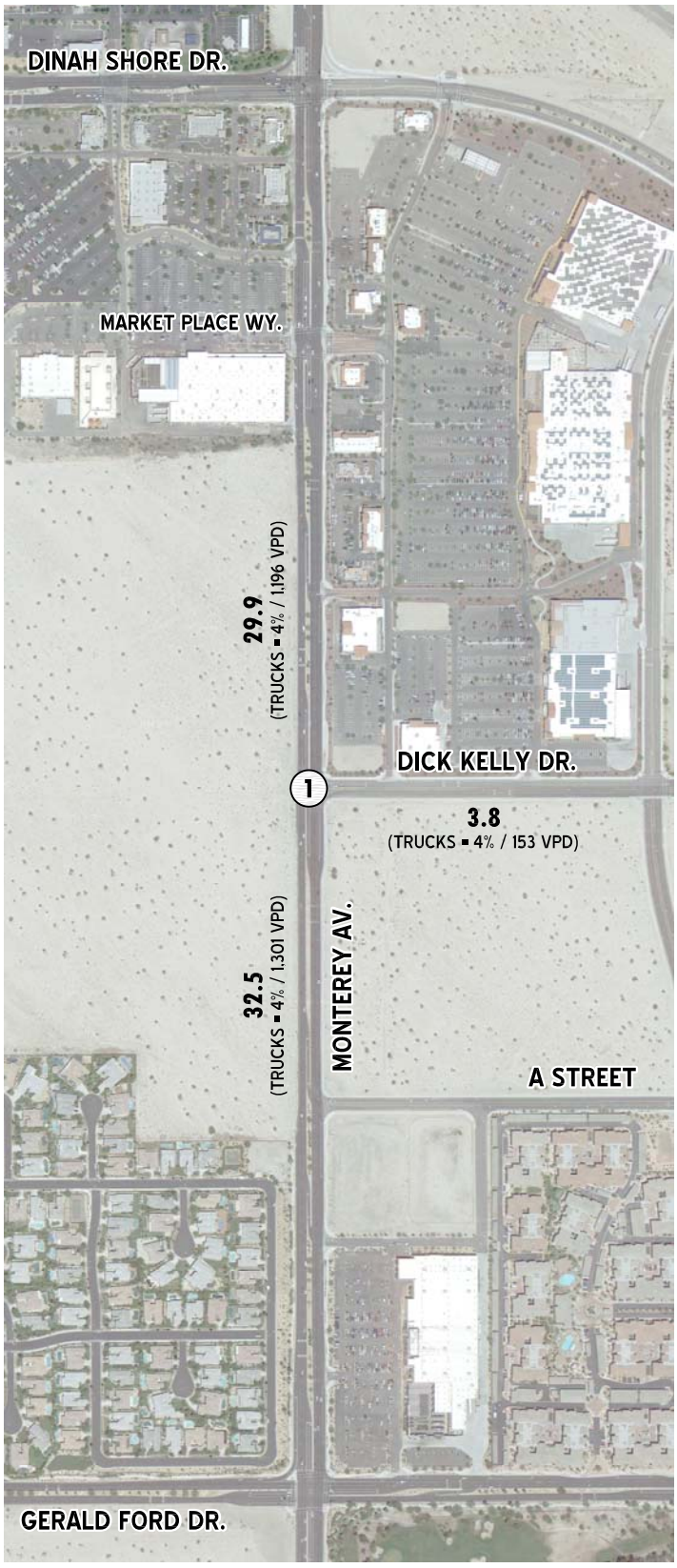
LEGEND:

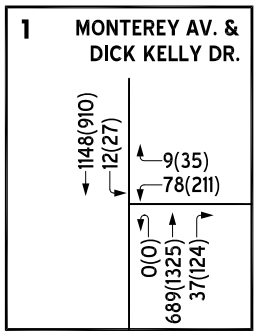
- SIDEWALK
- DIRT
- Ⓑ BUS STOP

N

EXHIBIT E

EXISTING (2012) TRAFFIC VOLUMES





LEGEND:

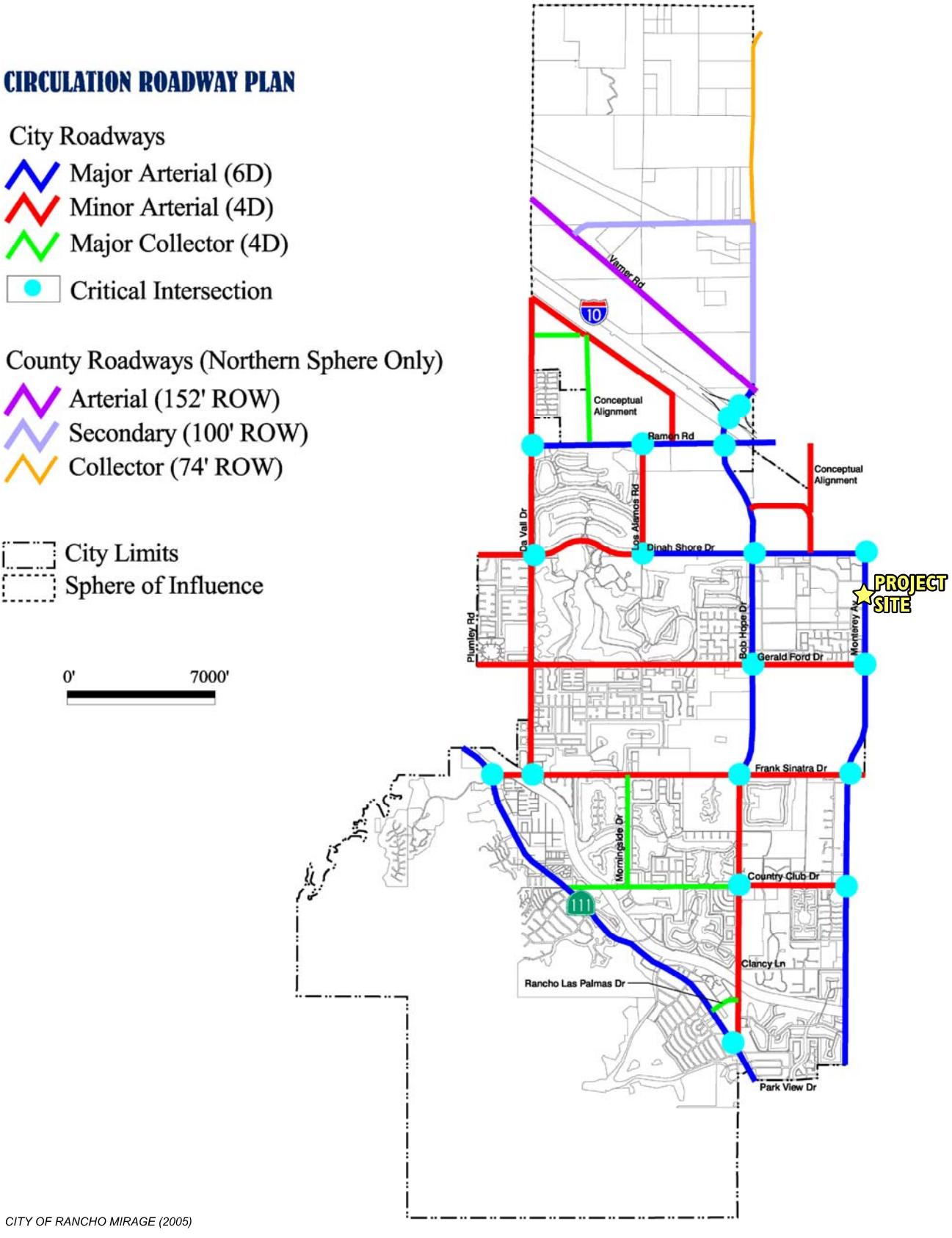
10.0 ▪ VEHICLES PER DAY (1000'S)

10(10) ▪ AM(PM) PEAK HOUR VOLUMES

N

EXHIBIT F

CITY OF RANCHO MIRAGE
GENERAL PLAN CIRCULATION ELEMENT

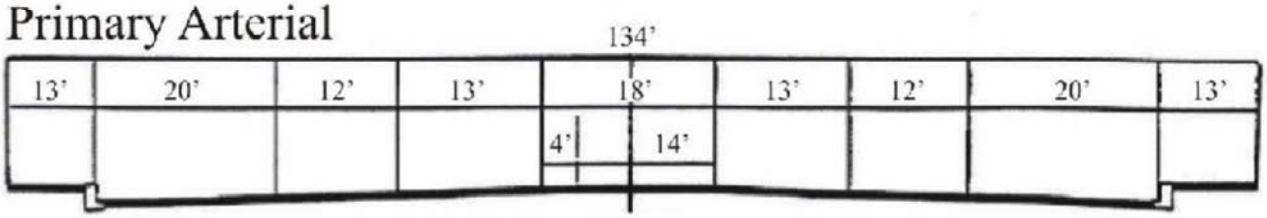


SOURCE: CITY OF RANCHO MIRAGE (2005)

EXHIBIT G

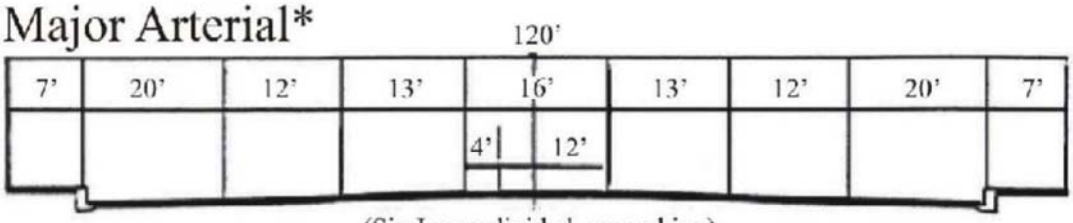
CITY OF RANCHO MIRAGE
GENERAL PLAN ROADWAY CROSS-SECTIONS

Primary Arterial



(Six Lanes divided, no parking)

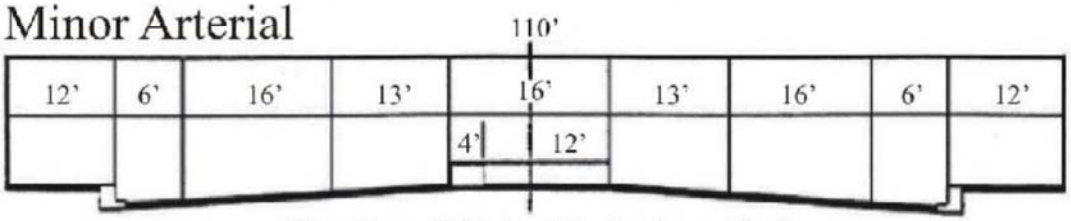
Major Arterial*



(Six Lanes divided, no parking)

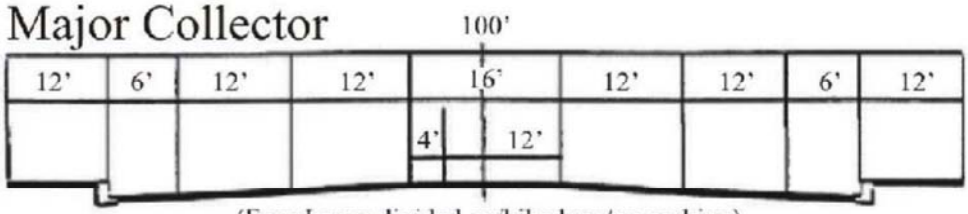
*Highway 111 has special design geometrics. See Rancho Mirage Highway 111 Alignment Study, 1996.

Minor Arterial



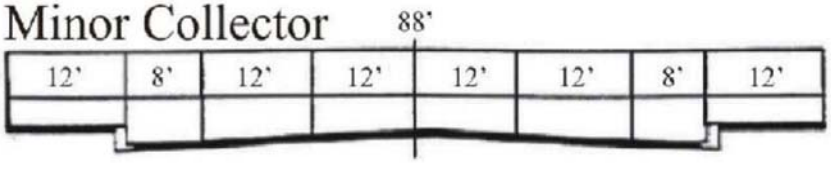
(Four Lanes divided, w/bike lane/no parking)

Major Collector



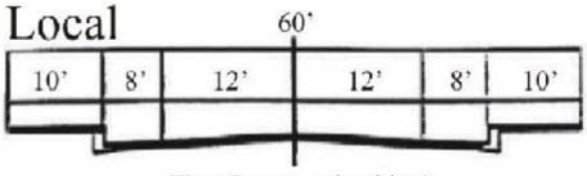
(Four Lanes divided, w/bike lane/no parking)

Minor Collector



(Four Lanes undivided, w/parking)

Local



(Two Lanes, w/parking)

SOURCE: CITY OF RANCHO MIRAGE (2005)

EXHIBIT H

CITY OF PALM DESERT
GENERAL PLAN CIRCULATION ELEMENT

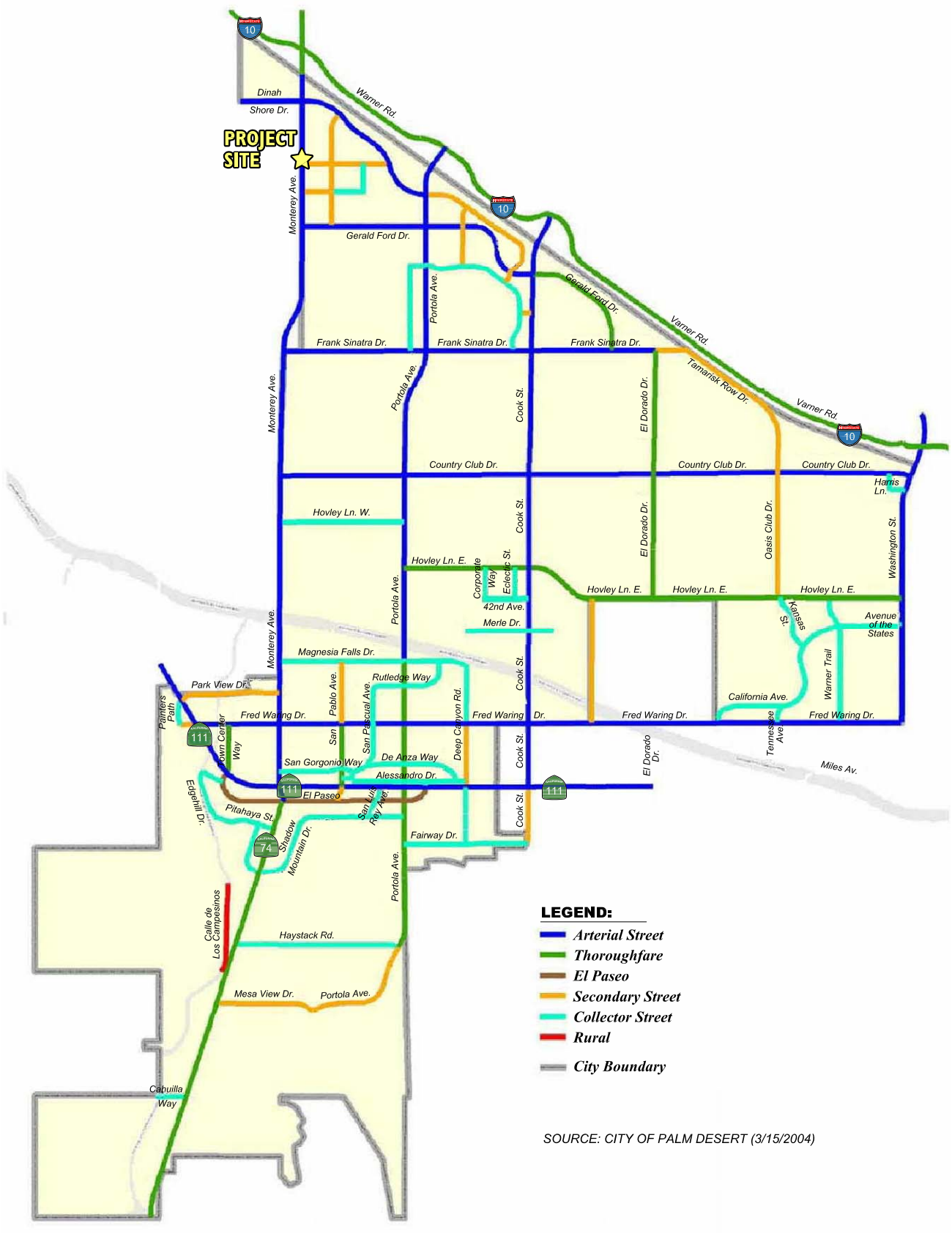
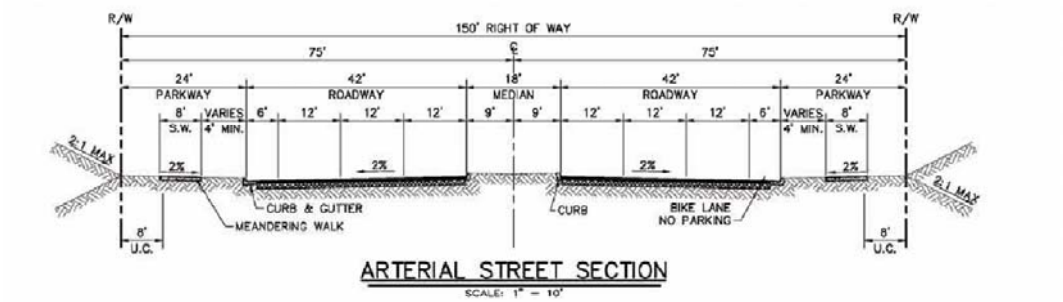


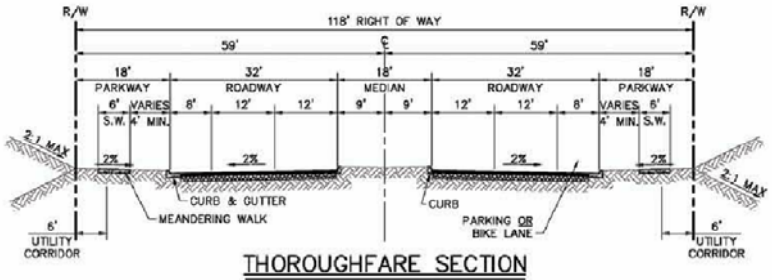
EXHIBIT I

CITY OF PALM DESERT
GENERAL PLAN ROADWAY CROSS-SECTIONS



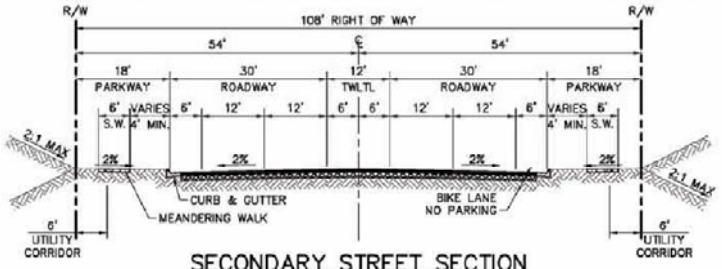
ARTERIAL STREET SECTION

SCALE: 1" = 10'



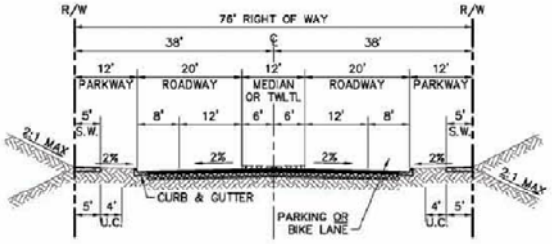
THOROUGHFARE SECTION

SCALE: 1" = 10'



SECONDARY STREET SECTION

SCALE: 1" = 10'



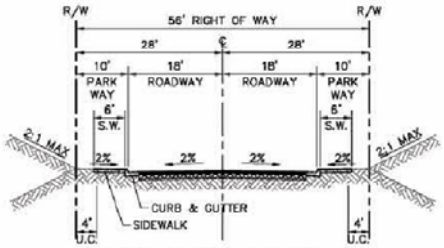
COLLECTOR STREET SECTION

SCALE: 1" = 10'

LEGEND:

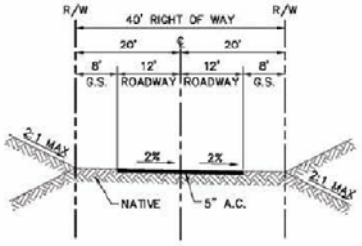
TW.TL.	TWO WAY LEFT TURN LANE
U.C.	UTILITY CORRIDOR*
S.W.	SIDEWALK
G.S.	GRADED SHOULDER
	ASPHALT PAVING
	AGGREGATE BASE
	AGGREGATE BASE
R/W	RIGHT OF WAY LINE
℄	STREET CENTERLINE

* UTILITY CORRIDOR IS FOR AT GRADE OR ABOVE GROUND FACILITIES. (I.E. WATER METERS, TELE. RISERS, ETC....)



LOCAL STREET SECTION

SCALE: 1" = 10'



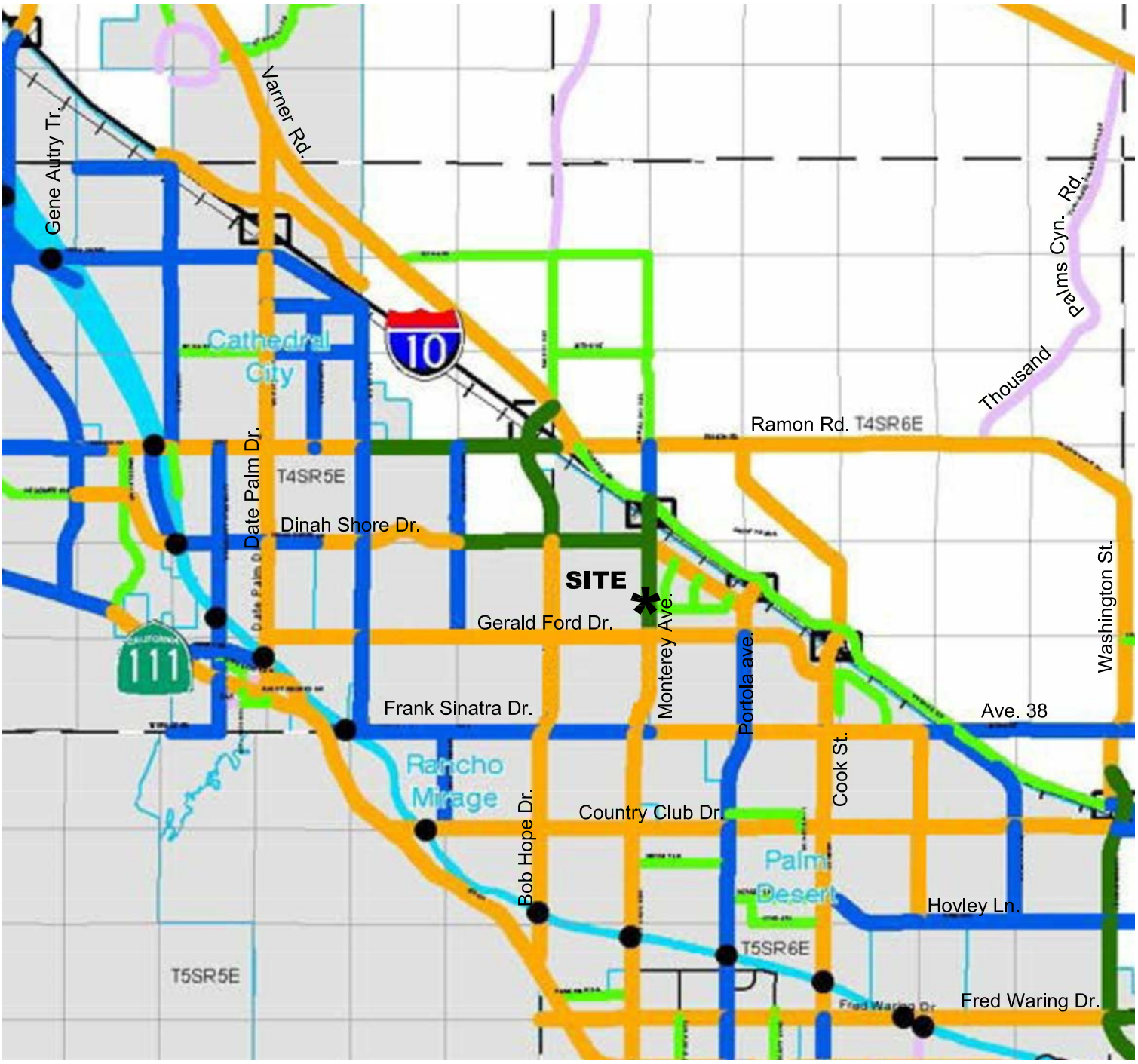
RURAL STREET SECTION

SCALE: 1" = 10'

SOURCE: CITY OF PALM DESERT

EXHIBIT J

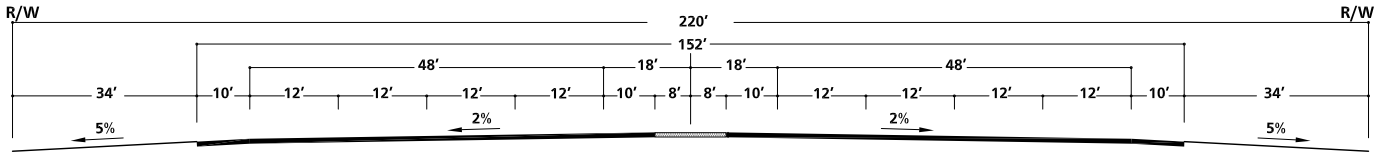
RIVERSIDE COUNTY GENERAL PLAN CIRCULATION ELEMENT



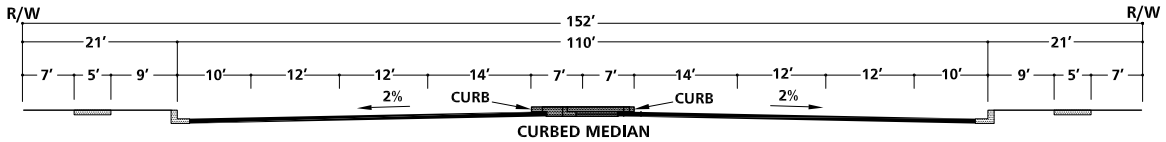
SOURCE: RIVERSIDE COUNTY INTEGRATED PROJECT (RCIP) (OCTOBER 7, 2003)

EXHIBIT K

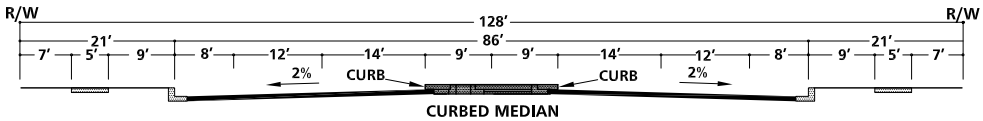
RIVERSIDE COUNTY
GENERAL PLAN ROADWAY CROSS-SECTIONS



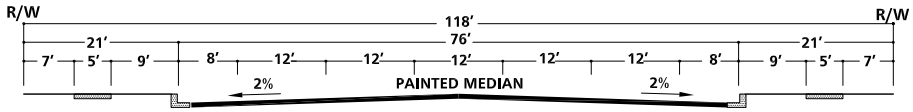
EXPRESSWAY - 8 LANES



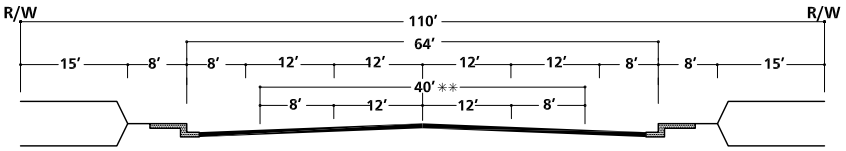
URBAN ARTERIAL HIGHWAY *



ARTERIAL HIGHWAY *

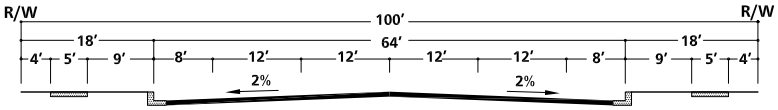


MAJOR HIGHWAY - 4 LANES

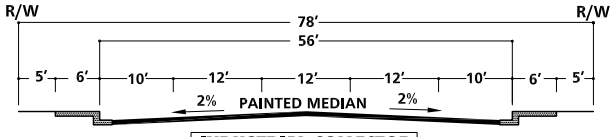


MOUNTAIN ARTERIAL - 2 TO 4 LANES

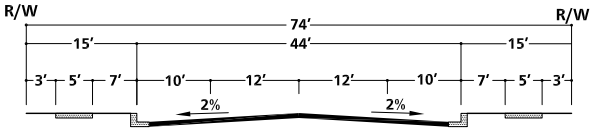
** 2 LANE SECTION



SECONDARY HIGHWAY



INDUSTRIAL COLLECTOR



COLLECTOR

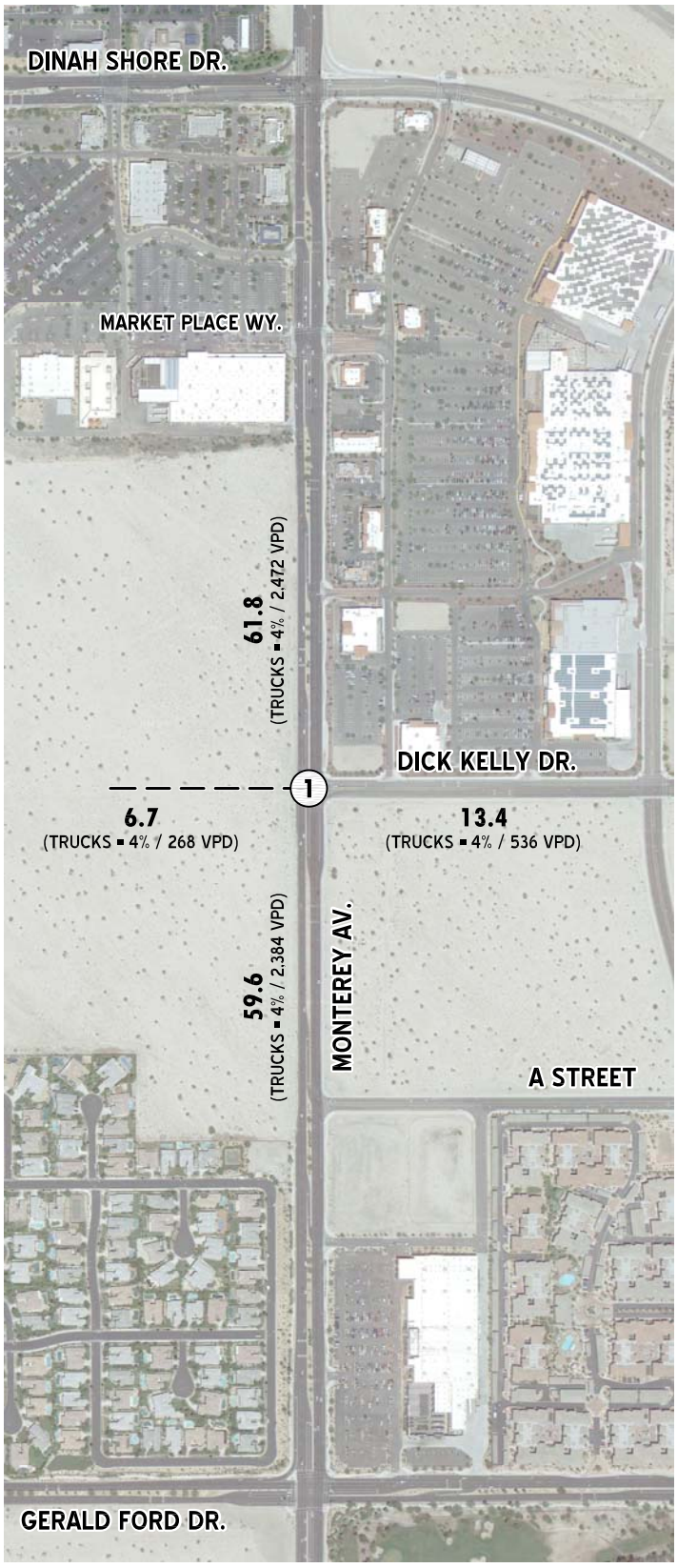
* *IMPROVEMENTS MAY BE RECONFIGURED TO ACCOMMODATE EXCLUSIVE TRANSIT LANES OR ALTERNATIVE LANE ARRANGEMENTS ADDITIONAL RIGHT OF WAY MAY BE REQUIRED AT INTERSECTIONS TO ACCOMMODATE ULTIMATE IMPROVEMENTS FOR STATE HIGHWAYS SHALL CONFORM TO CALTRANS DESIGN STANDARDS.*

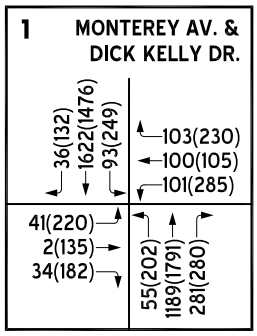
NOT TO SCALE

SOURCE: COUNTY OF RIVERSIDE

EXHIBIT L

LONG RANGE (2035) TRAFFIC VOLUMES





LEGEND:

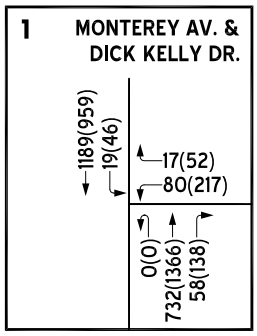
10.0 ▪ VEHICLES PER DAY (1000'S)

10(10) ▪ AM(PM) PEAK HOUR VOLUMES

N

EXHIBIT M

OPENING YEAR (2014) TRAFFIC VOLUMES



LEGEND:

10.0 = VEHICLES PER DAY (1000'S)

10(10) = AM(PM) PEAK HOUR VOLUMES

N

Table 2

Intersection Analysis for Existing (2012) Conditions

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Delay[2] (secs.)		Level of Service	
			Northbound			Southbound			Eastbound			Westbound						
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
1	Monterey Av. / Dick Kelly Dr.	TS	1	3	1	1	2	0	0	0	0	1	0	1	5.6	12.3	A	B

1 When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right

2 Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

3 TS = Traffic Signal

Table 3

Queuing Analysis for Existing (2012) Conditions

Intersection	Turning Movement	Existing Storage Length[1]	50th Percentile Queue Length[2] (feet)		50th Percentile Queue Issue[3]		95th Percentile Queue Length[2] (feet)		95th Percentile Queue Issue[3]	
			AM	PM	AM	PM	AM	PM	AM	PM
Monterey Avenue										
• Dick Kelly Drive	NBU-Turn	205	0	0	O.K.	O.K.	0	0	O.K.	O.K.
	NBT	>1,000	28	150	O.K.	O.K.	74	175	O.K.	O.K.
	NBR	215	0	0	O.K.	O.K.	9	18	O.K.	O.K.
	SBL	250	10	22	O.K.	O.K.	31	52	O.K.	O.K.
	SBT	>1,000	90	103	O.K.	O.K.	145	113	O.K.	O.K.

[1] Storage length (for turning movements) or internal link distance (for through movements).

[2] Queue Length is based on the (95th Percentile) queue length.

[3] Storage length is O.K. if the queuing length is less than or equal to the existing storage length.

[4] 95th percentile volumes exceed capacity. Queue may be longer

Table 4

Intersection Analysis for Long Range (2035) Conditions

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Delay[2] (secs.)		Level of Service	
			Northbound			Southbound			Eastbound			Westbound						
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
1	Monterey Av. / Dick Kelly Dr.																	
	- Without Project Widening[4]	TS	1	3	1	1	2	d	**1**	**1**	**1**	1	1	0	22.6	**59.0**	C	**E**
	- With Project Widening[5]	TS	1	3	1	1	**3**	0	**1**	**1**	**1**	1	1	0	20.3	50.0	C	D

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; d = Defacto; **1** = Improvement

[2] Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with a traffic signal. The study area intersection have been analyzed using the Synchro 8.0 software.

[3] TS = Traffic Signal

[4] Monterey Avenue and Dick Kelly Drive is anticipated to be constructed as a 4-leg intersection based on the Monterey Commons traffic study (Urban Crossroads, 3/2008).

[5] With Project widening. Provide a 3rd southbound through lane.

* **BOLD** = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

Table 5

Queuing Analysis for Long Range (2035) Without Widening Conditions

Intersection	Turning Movement	Recommended Storage Length[1] (ft) per lane (95th Percentile)	Existing Storage Length	50th Percentile Queue Length[2] (feet)		50th Percentile Queue Issue[3]		95th Percentile Queue Length[2] (feet)		95th Percentile Queue Issue[3]	
				AM	PM	AM	PM	AM	PM	AM	PM
Monterey Avenue											
• Dick Kelly Drive	NBL	350	205	41	192 [4]	O.K.	O.K.	84	345 [5]	O.K.	YES [6]
	NBT	>1,000	>1,000	183	427	O.K.	O.K.	272	600 [5]	O.K.	O.K.
	NBR	215	215	0	39	O.K.	O.K.	47	115	O.K.	O.K.
	SBL	400	250	69	232 [4]	O.K.	O.K.	124	398 [5]	O.K.	YES [6]
	SBT	>1,000	>1,000	471	533 [4]	O.K.	O.K.	770 [5]	798 [5]	O.K.	O.K.

[1] Recommended storage length (for turning movements) or internal link distance (for through movements) if queue length exceeds existing storage.

[2] Queue Length is based on the (95th Percentile) queue length.

[3] Storage length is O.K. if the queuing length is less than or equal to the existing storage length.

[4] Volume exceeds capacity, queue is theoretically infinite.

[5] 95th percentile volumes exceed capacity. Queue may be longer

[6] Provide minimum recommended storage length to address the potential queuing issue.

Table 6

Queuing Analysis for Long Range (2035) With Widening Conditions

Intersection	Turning Movement	Recommended Storage Length[1] (ft) per lane (95th Percentile)	Existing Storage Length	50th Percentile Queue Length[2] (feet)		50th Percentile Queue Issue[3]		95th Percentile Queue Length[2] (feet)		95th Percentile Queue Issue[3]	
				AM	PM	AM	PM	AM	PM	AM	PM
Monterey Avenue											
• Dick Kelly Drive	NBL	325	205	41	158	O.K.	O.K.	82	309 [5]	O.K.	YES [6]
	NBT	>1,000	>1,000	175	441	O.K.	O.K.	272	626 [5]	O.K.	O.K.
	NBR	215	215	0	44	O.K.	O.K.	47	124	O.K.	O.K.
	SBL	400	250	71	220 [4]	O.K.	O.K.	123	386 [5]	O.K.	YES [6]
	SBT	>1,000	>1,000	270	368	O.K.	O.K.	412	489	O.K.	O.K.

[1] Recommended storage length (for turning movements) or internal link distance (for through movements) if queue length exceeds existing storage.

[2] Queue Length is based on the (95th Percentile) queue length.

[3] Storage length is O.K. if the queuing length is less than or equal to the existing storage length.

[4] Volume exceeds capacity, queue is theoretically infinite.

[5] 95th percentile volumes exceed capacity. Queue may be longer

[6] Provide minimum recommended storage length to address the potential queuing issue.

Table 7

Intersection Analysis for Opening Year (2014) Conditions

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Delay[2] (secs.)		Level of Service	
			Northbound			Southbound			Eastbound			Westbound						
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
1	Monterey Av. / Dick Kelly Dr.																	
	- Without Project Widening[4]	TS	1	3	1	1	2	0	0	0	0	1	0	1	6.1	13.8	A	B
	- With Project Widening[5]	TS	1	3	1	1	**3**	0	0	0	0	1	0	1	5.7	13.6	A	B

1 When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; d = Defacto; **1** = Improvement

2 Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with a traffic signal. The study area intersection have been analyzed using the Synchro 8.0 software.

3 TS = Traffic Signal

4 Monterey Avenue and Dick Kelly Drive is anticipated to be constructed as a 4-leg intersection based on the Monterey Commons traffic study (Urban Crossroads, 3/2008).

5 With Project widening. Provide a 3rd southbound through lane.

ATTACHMENT A

Traffic Count Data

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Rancho Mirage
N/S: Monterey Avenue
E/W: Dick Kelly Drive
Weather: Sunny

File Name : RNMMODKAM
Site Code : 00000031
Start Date : 11/8/2012
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

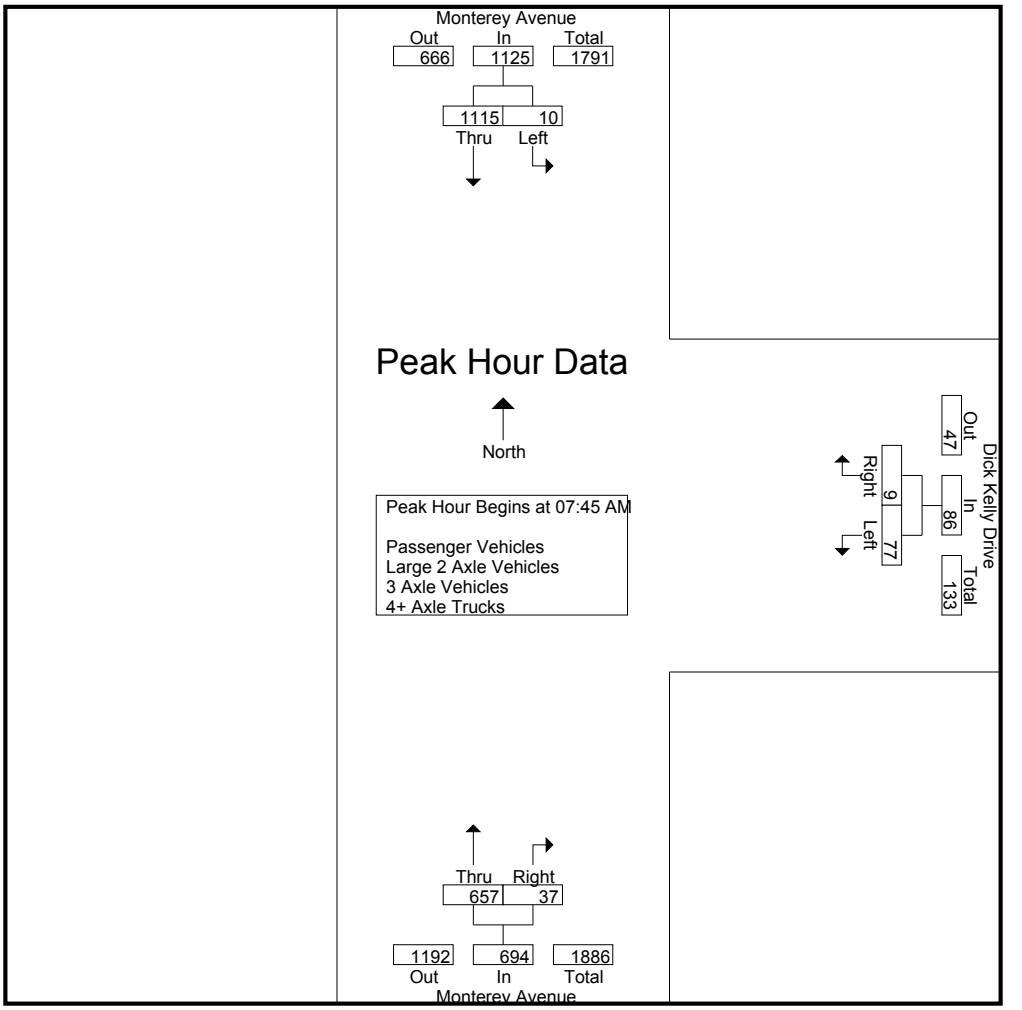
	Monterey Avenue Southbound			Dick Kelly Drive Westbound			Monterey Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	194	194	8	2	10	94	3	97	301
07:15 AM	0	250	250	16	0	16	111	6	117	383
07:30 AM	0	335	335	15	2	17	125	4	129	481
07:45 AM	4	371	375	13	1	14	142	7	149	538
Total	4	1150	1154	52	5	57	472	20	492	1703
08:00 AM	3	258	261	17	1	18	164	9	173	452
08:15 AM	1	238	239	14	4	18	162	12	174	431
08:30 AM	2	248	250	33	3	36	189	9	198	484
08:45 AM	0	279	279	17	9	26	180	16	196	501
Total	6	1023	1029	81	17	98	695	46	741	1868
Grand Total	10	2173	2183	133	22	155	1167	66	1233	3571
Apprch %	0.5	99.5		85.8	14.2		94.6	5.4		
Total %	0.3	60.9	61.1	3.7	0.6	4.3	32.7	1.8	34.5	
Passenger Vehicles	9	2091	2100	131	19	150	1116	64	1180	3430
% Passenger Vehicles	90	96.2	96.2	98.5	86.4	96.8	95.6	97	95.7	96.1
Large 2 Axle Vehicles	0	48	48	1	1	2	20	1	21	71
% Large 2 Axle Vehicles	0	2.2	2.2	0.8	4.5	1.3	1.7	1.5	1.7	2
3 Axle Vehicles	0	24	24	0	0	0	17	0	17	41
% 3 Axle Vehicles	0	1.1	1.1	0	0	0	1.5	0	1.4	1.1
4+ Axle Trucks	1	10	11	1	2	3	14	1	15	29
% 4+ Axle Trucks	10	0.5	0.5	0.8	9.1	1.9	1.2	1.5	1.2	0.8

	Monterey Avenue Southbound			Dick Kelly Drive Westbound			Monterey Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	**4**	**371**	**375**	13	1	14	142	7	149	**538**
08:00 AM	3	258	261	17	1	18	164	9	173	452
08:15 AM	1	238	239	14	**4**	18	162	**12**	174	431
08:30 AM	2	248	250	**33**	3	**36**	**189**	9	**198**	484
Total Volume	10	1115	1125	77	9	86	657	37	694	1905
% App. Total	0.9	99.1		89.5	10.5		94.7	5.3		
PHF	.625	.751	.750	.583	.563	.597	.869	.771	.876	.885

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Rancho Mirage
N/S: Monterey Avenue
E/W: Dick Kelly Drive
Weather: Sunny

File Name : RNMMODKAM
Site Code : 00000031
Start Date : 11/8/2012
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:15 AM			08:00 AM			08:00 AM		
+0 mins.	0	250	250	17	1	18	164	9	173
+15 mins.	0	335	335	14	4	18	162	12	174
+30 mins.	**4**	**371**	**375**	**33**	3	**36**	**189**	9	**198**
+45 mins.	3	258	261	17	**9**	26	180	**16**	196
Total Volume	7	1214	1221	81	17	98	695	46	741
% App. Total	0.6	99.4		82.7	17.3		93.8	6.2	
PHF	.438	.818	.814	.614	.472	.681	.919	.719	.936

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Rancho Mirage
N/S: Monterey Avenue
E/W: Dick Kelly Drive
Weather: Sunny

File Name : RNMMODKAM
Site Code : 00000031
Start Date : 11/8/2012
Page No : 1

Groups Printed- Passenger Vehicles

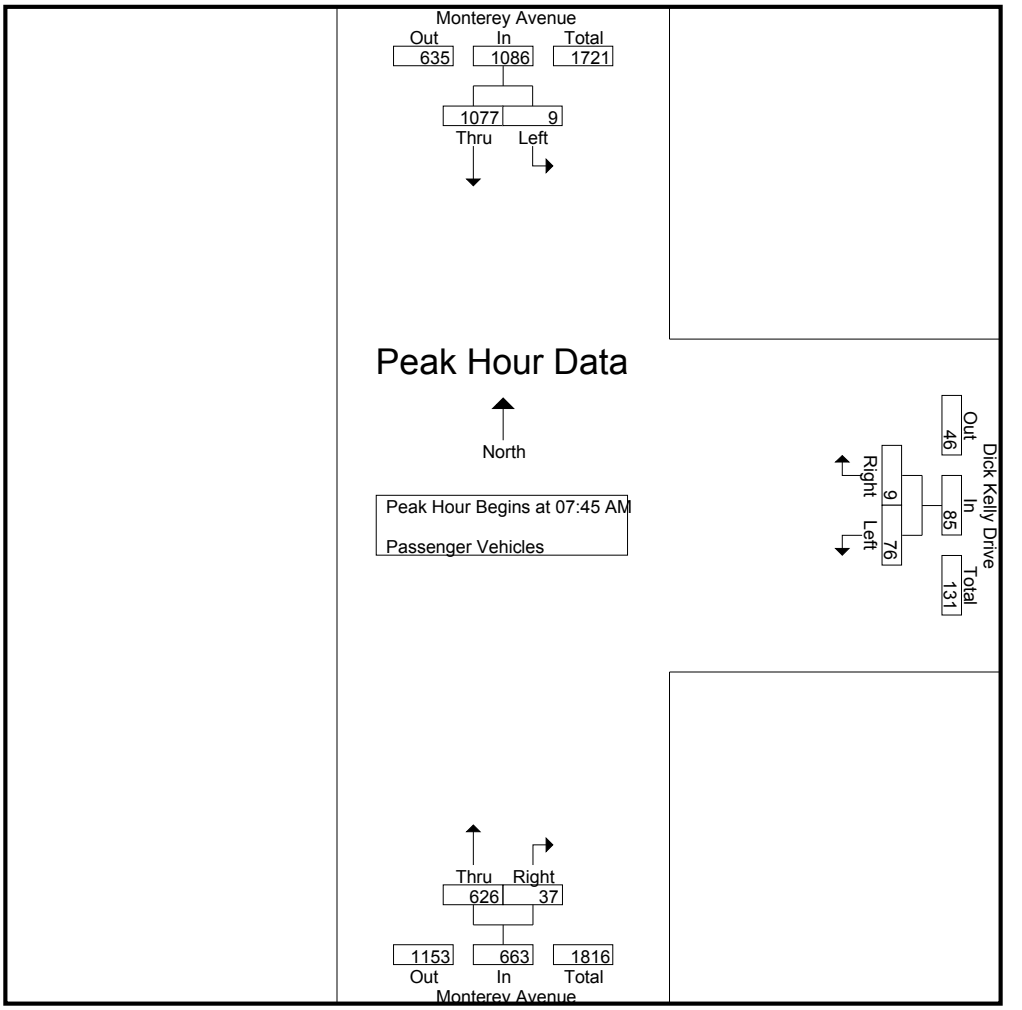
	Monterey Avenue Southbound			Dick Kelly Drive Westbound			Monterey Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	185	185	8	2	10	92	3	95	290
07:15 AM	0	237	237	16	0	16	110	6	116	369
07:30 AM	0	325	325	15	1	16	119	2	121	462
07:45 AM	4	362	366	13	1	14	135	7	142	522
Total	4	1109	1113	52	4	56	456	18	474	1643
08:00 AM	2	249	251	17	1	18	159	9	168	437
08:15 AM	1	230	231	13	4	17	154	12	166	414
08:30 AM	2	236	238	33	3	36	178	9	187	461
08:45 AM	0	267	267	16	7	23	169	16	185	475
Total	5	982	987	79	15	94	660	46	706	1787
Grand Total	9	2091	2100	131	19	150	1116	64	1180	3430
Apprch %	0.4	99.6		87.3	12.7		94.6	5.4		
Total %	0.3	61	61.2	3.8	0.6	4.4	32.5	1.9	34.4	

	Monterey Avenue Southbound			Dick Kelly Drive Westbound			Monterey Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	**4**	**362**	**366**	13	1	14	135	7	142	**522**
08:00 AM	2	249	251	17	1	18	159	9	168	437
08:15 AM	1	230	231	13	**4**	17	154	**12**	166	414
08:30 AM	2	236	238	**33**	3	**36**	**178**	9	**187**	461
Total Volume	9	1077	1086	76	9	85	626	37	663	1834
% App. Total	0.8	99.2		89.4	10.6		94.4	5.6		
PHF	.563	.744	.742	.576	.563	.590	.879	.771	.886	.878

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Rancho Mirage
N/S: Monterey Avenue
E/W: Dick Kelly Drive
Weather: Sunny

File Name : RNMMODKAM
Site Code : 00000031
Start Date : 11/8/2012
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:45 AM			07:45 AM			07:45 AM		
+0 mins.	**4**	**362**	**366**	13	1	14	135	7	142
+15 mins.	2	249	251	17	1	18	159	9	168
+30 mins.	1	230	231	13	**4**	17	154	**12**	166
+45 mins.	2	236	238	**33**	3	**36**	**178**	9	**187**
Total Volume	9	1077	1086	76	9	85	626	37	663
% App. Total	0.8	99.2		89.4	10.6		94.4	5.6	
PHF	.563	.744	.742	.576	.563	.590	.879	.771	.886

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Rancho Mirage
N/S: Monterey Avenue
E/W: Dick Kelly Drive
Weather: Sunny

File Name : RNMMODKAM
Site Code : 00000031
Start Date : 11/8/2012
Page No : 1

Groups Printed- Large 2 Axle Vehicles

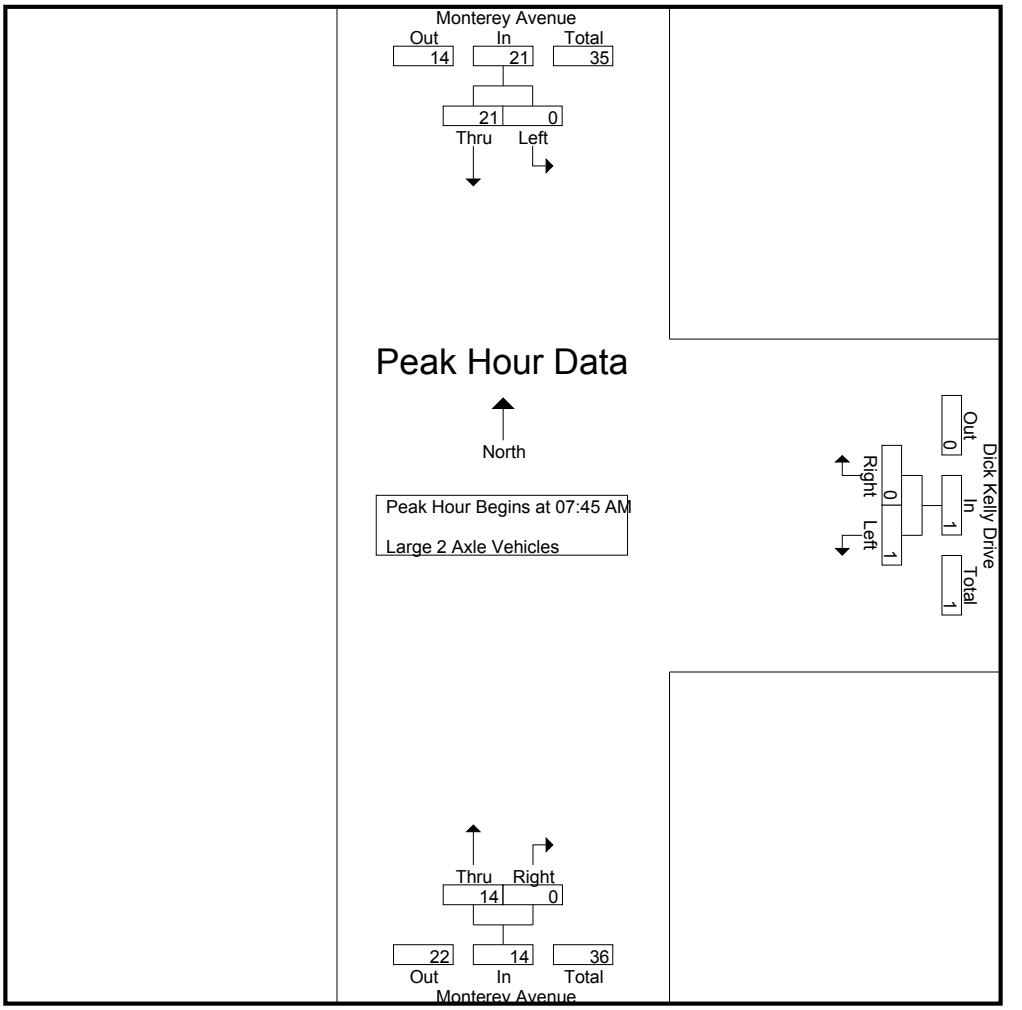
	Monterey Avenue Southbound			Dick Kelly Drive Westbound			Monterey Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	6	6	0	0	0	0	0	0	6
07:15 AM	0	9	9	0	0	0	0	0	0	9
07:30 AM	0	7	7	0	0	0	3	1	4	11
07:45 AM	0	6	6	0	0	0	4	0	4	10
Total	0	28	28	0	0	0	7	1	8	36
08:00 AM	0	6	6	0	0	0	3	0	3	9
08:15 AM	0	5	5	1	0	1	4	0	4	10
08:30 AM	0	4	4	0	0	0	3	0	3	7
08:45 AM	0	5	5	0	1	1	3	0	3	9
Total	0	20	20	1	1	2	13	0	13	35
Grand Total	0	48	48	1	1	2	20	1	21	71
Apprch %	0	100		50	50		95.2	4.8		
Total %	0	67.6	67.6	1.4	1.4	2.8	28.2	1.4	29.6	

	Monterey Avenue Southbound			Dick Kelly Drive Westbound			Monterey Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	0	**6**	**6**	0	0	0	**4**	0	**4**	**10**
08:00 AM	0	6	6	0	0	0	3	0	3	9
08:15 AM	0	5	5	**1**	0	**1**	4	0	4	10
08:30 AM	0	4	4	0	0	0	3	0	3	7
Total Volume	0	21	21	1	0	1	14	0	14	36
% App. Total	0	100		100	0		100	0		
PHF	.000	.875	.875	.250	.000	.250	.875	.000	.875	.900

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Rancho Mirage
N/S: Monterey Avenue
E/W: Dick Kelly Drive
Weather: Sunny

File Name : RNMMODKAM
Site Code : 00000031
Start Date : 11/8/2012
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:45 AM			07:45 AM			07:45 AM		
+0 mins.	0	**6**	**6**	0	0	0	**4**	0	**4**
+15 mins.	0	6	6	0	0	0	3	0	3
+30 mins.	0	5	5	**1**	0	**1**	4	0	4
+45 mins.	0	4	4	0	0	0	3	0	3
Total Volume	0	21	21	1	0	1	14	0	14
% App. Total	0	100		100	0		100	0	
PHF	.000	.875	.875	.250	.000	.250	.875	.000	.875

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Rancho Mirage
N/S: Monterey Avenue
E/W: Dick Kelly Drive
Weather: Sunny

File Name : RNMMODKAM
Site Code : 00000031
Start Date : 11/8/2012
Page No : 1

Groups Printed- 3 Axle Vehicles

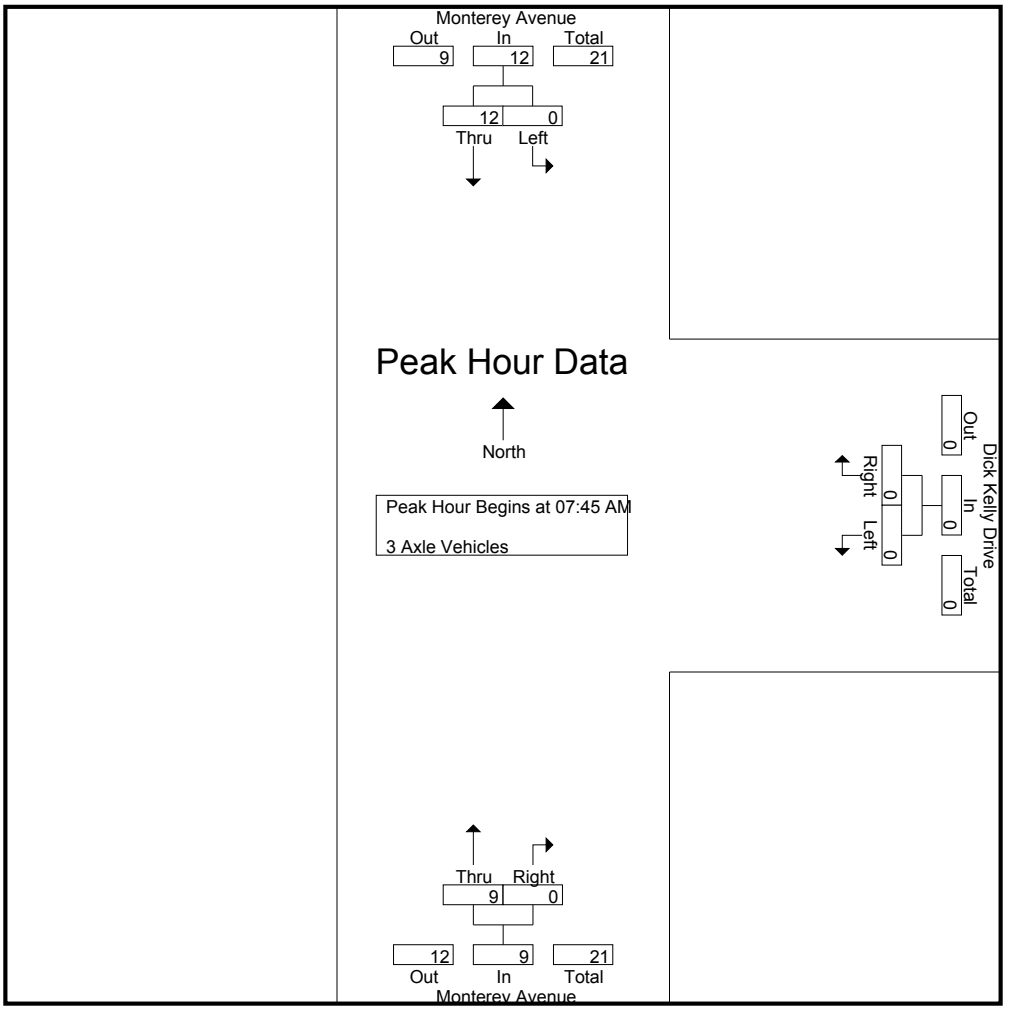
	Monterey Avenue Southbound			Dick Kelly Drive Westbound			Monterey Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	3	3	0	0	0	0	0	0	3
07:15 AM	0	3	3	0	0	0	0	0	0	3
07:30 AM	0	1	1	0	0	0	1	0	1	2
07:45 AM	0	1	1	0	0	0	2	0	2	3
Total	0	8	8	0	0	0	3	0	3	11
08:00 AM	0	2	2	0	0	0	2	0	2	4
08:15 AM	0	2	2	0	0	0	1	0	1	3
08:30 AM	0	7	7	0	0	0	4	0	4	11
08:45 AM	0	5	5	0	0	0	7	0	7	12
Total	0	16	16	0	0	0	14	0	14	30
Grand Total	0	24	24	0	0	0	17	0	17	41
Apprch %	0	100		0	0		100	0		
Total %	0	58.5	58.5	0	0	0	41.5	0	41.5	

	Monterey Avenue Southbound			Dick Kelly Drive Westbound			Monterey Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	0	1	1	0	0	0	2	0	2	3
08:00 AM	0	2	2	0	0	0	2	0	2	4
08:15 AM	0	2	2	0	0	0	1	0	1	3
08:30 AM	0	**7**	**7**	0	0	0	**4**	0	**4**	**11**
Total Volume	0	12	12	0	0	0	9	0	9	21
% App. Total	0	100		0	0		100	0		
PHF	.000	.429	.429	.000	.000	.000	.563	.000	.563	.477

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Rancho Mirage
N/S: Monterey Avenue
E/W: Dick Kelly Drive
Weather: Sunny

File Name : RNMMODKAM
Site Code : 00000031
Start Date : 11/8/2012
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:45 AM			07:45 AM			07:45 AM		
+0 mins.	0	1	1	0	0	0	2	0	2
+15 mins.	0	2	2	0	0	0	2	0	2
+30 mins.	0	2	2	0	0	0	1	0	1
+45 mins.	0	**7**	**7**	0	0	0	**4**	0	**4**
Total Volume	0	12	12	0	0	0	9	0	9
% App. Total	0	100		0	0		100	0	
PHF	.000	.429	.429	.000	.000	.000	.563	.000	.563

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Rancho Mirage
N/S: Monterey Avenue
E/W: Dick Kelly Drive
Weather: Sunny

File Name : RNMMODKAM
Site Code : 00000031
Start Date : 11/8/2012
Page No : 1

Groups Printed- 4+ Axle Trucks

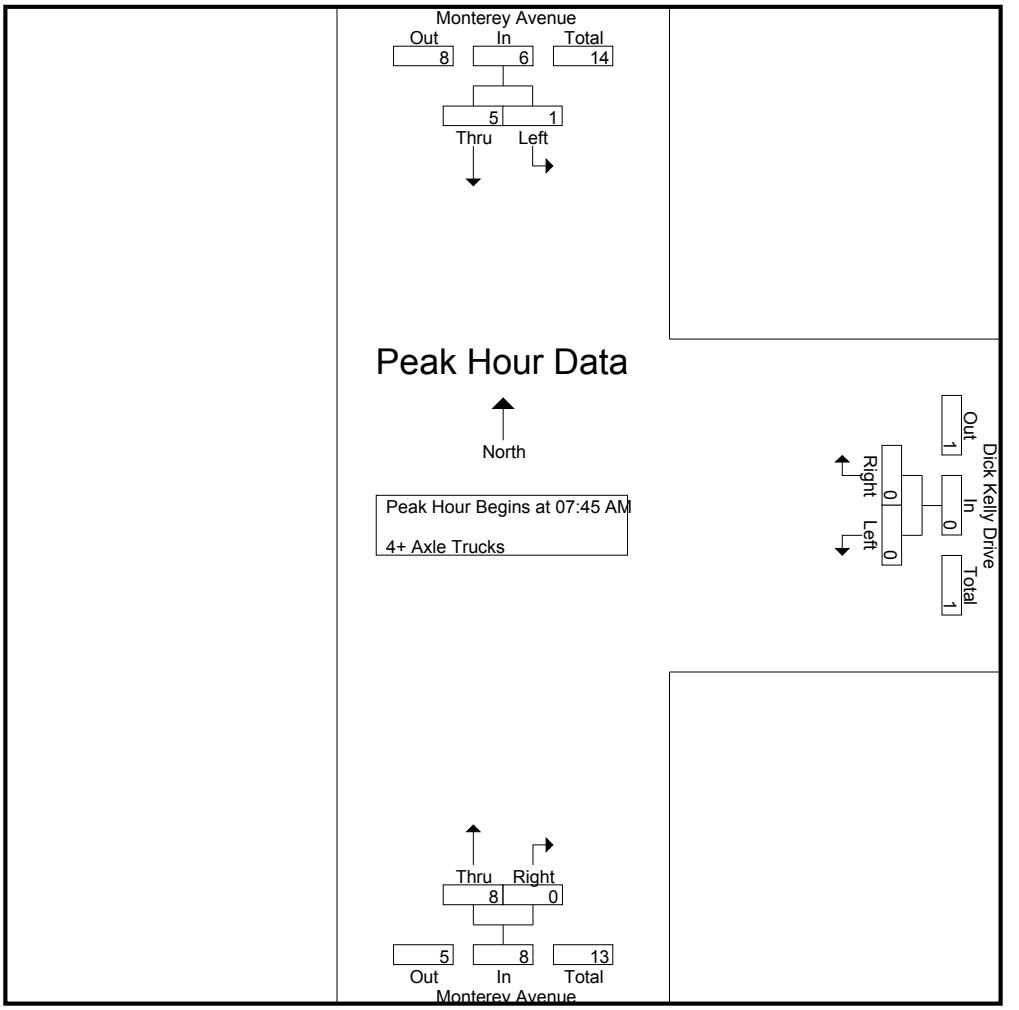
	Monterey Avenue Southbound			Dick Kelly Drive Westbound			Monterey Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	2	0	2	2
07:15 AM	0	1	1	0	0	0	1	0	1	2
07:30 AM	0	2	2	0	1	1	2	1	3	6
07:45 AM	0	2	2	0	0	0	1	0	1	3
Total	0	5	5	0	1	1	6	1	7	13
08:00 AM	1	1	2	0	0	0	0	0	0	2
08:15 AM	0	1	1	0	0	0	3	0	3	4
08:30 AM	0	1	1	0	0	0	4	0	4	5
08:45 AM	0	2	2	1	1	2	1	0	1	5
Total	1	5	6	1	1	2	8	0	8	16
Grand Total	1	10	11	1	2	3	14	1	15	29
Apprch %	9.1	90.9		33.3	66.7		93.3	6.7		
Total %	3.4	34.5	37.9	3.4	6.9	10.3	48.3	3.4	51.7	

	Monterey Avenue Southbound			Dick Kelly Drive Westbound			Monterey Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	0	**2**	**2**	0	0	0	1	0	1	3
08:00 AM	**1**	1	2	0	0	0	0	0	0	2
08:15 AM	0	1	1	0	0	0	3	0	3	4
08:30 AM	0	1	1	0	0	0	**4**	0	**4**	**5**
Total Volume	1	5	6	0	0	0	8	0	8	14
% App. Total	16.7	83.3		0	0		100	0		
PHF	.250	.625	.750	.000	.000	.000	.500	.000	.500	.700

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Rancho Mirage
N/S: Monterey Avenue
E/W: Dick Kelly Drive
Weather: Sunny

File Name : RNMMODKAM
Site Code : 00000031
Start Date : 11/8/2012
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:45 AM			07:45 AM			07:45 AM		
+0 mins.	0	**2**	**2**	0	0	0	1	0	1
+15 mins.	**1**	1	2	0	0	0	0	0	0
+30 mins.	0	1	1	0	0	0	3	0	3
+45 mins.	0	1	1	0	0	0	**4**	0	**4**
Total Volume	1	5	6	0	0	0	8	0	8
% App. Total	16.7	83.3		0	0		100	0	
PHF	.250	.625	.750	.000	.000	.000	.500	.000	.500

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Rancho Mirage
N/S: Monterey Avenue
E/W: Dick Kelly Drive
Weather: Sunny

File Name : RNMMODKPM
Site Code : 00000031
Start Date : 11/8/2012
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

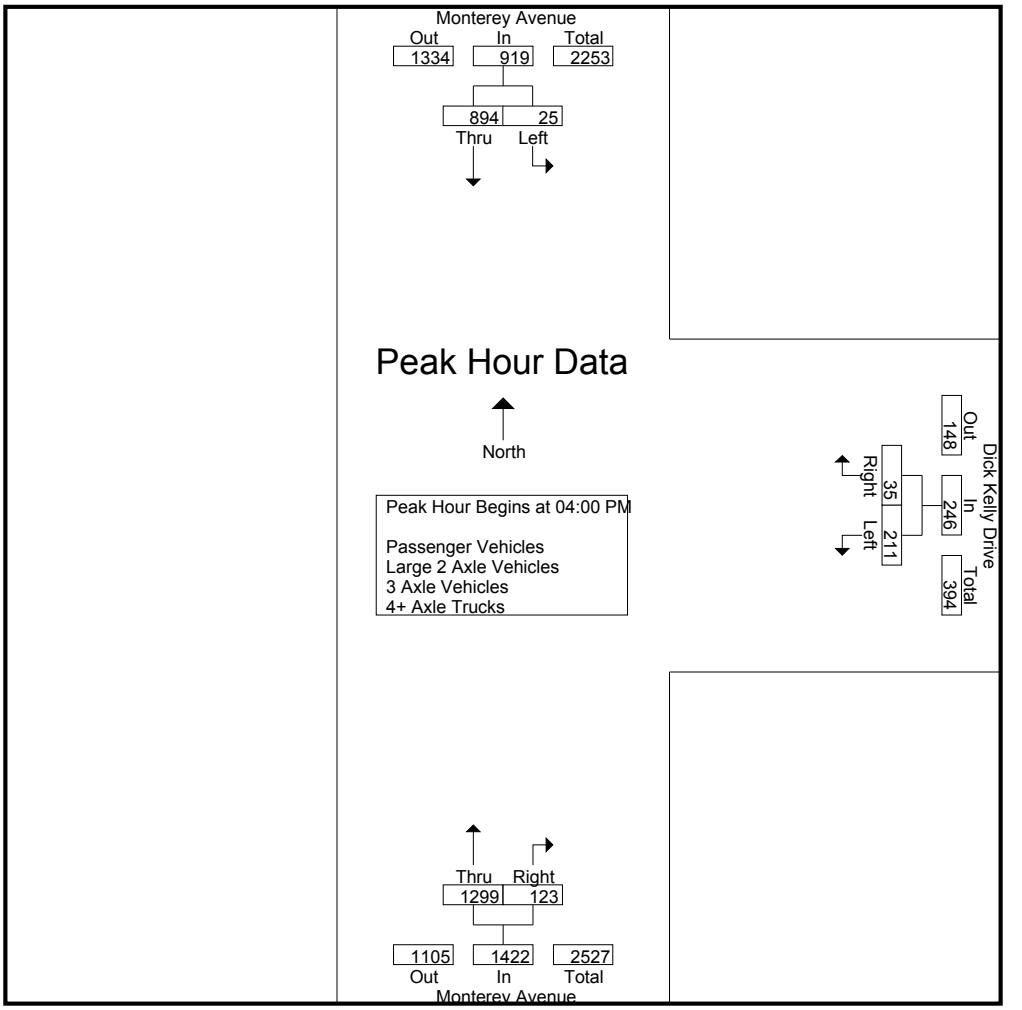
	Monterey Avenue Southbound			Dick Kelly Drive Westbound			Monterey Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	7	230	237	57	10	67	348	31	379	683
04:15 PM	10	211	221	48	9	57	311	25	336	614
04:30 PM	5	225	230	50	7	57	321	39	360	647
04:45 PM	3	228	231	56	9	65	319	28	347	643
Total	25	894	919	211	35	246	1299	123	1422	2587
05:00 PM	2	217	219	53	7	60	308	27	335	614
05:15 PM	4	202	206	40	17	57	367	23	390	653
05:30 PM	4	193	197	38	14	52	256	22	278	527
05:45 PM	2	195	197	39	5	44	244	18	262	503
Total	12	807	819	170	43	213	1175	90	1265	2297
Grand Total	37	1701	1738	381	78	459	2474	213	2687	4884
Apprch %	2.1	97.9		83	17		92.1	7.9		
Total %	0.8	34.8	35.6	7.8	1.6	9.4	50.7	4.4	55	
Passenger Vehicles	36	1677	1713	381	77	458	2428	212	2640	4811
% Passenger Vehicles	97.3	98.6	98.6	100	98.7	99.8	98.1	99.5	98.3	98.5
Large 2 Axle Vehicles	0	11	11	0	0	0	25	0	25	36
% Large 2 Axle Vehicles	0	0.6	0.6	0	0	0	1	0	0.9	0.7
3 Axle Vehicles	0	10	10	0	0	0	17	1	18	28
% 3 Axle Vehicles	0	0.6	0.6	0	0	0	0.7	0.5	0.7	0.6
4+ Axle Trucks	1	3	4	0	1	1	4	0	4	9
% 4+ Axle Trucks	2.7	0.2	0.2	0	1.3	0.2	0.2	0	0.1	0.2

	Monterey Avenue Southbound			Dick Kelly Drive Westbound			Monterey Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	7	**230**	**237**	**57**	**10**	**67**	**348**	31	**379**	**683**
04:15 PM	**10**	211	221	48	9	57	311	25	336	614
04:30 PM	5	225	230	50	7	57	321	**39**	360	647
04:45 PM	3	228	231	56	9	65	319	28	347	643
Total Volume	25	894	919	211	35	246	1299	123	1422	2587
% App. Total	2.7	97.3		85.8	14.2		91.4	8.6		
PHF	.625	.972	.969	.925	.875	.918	.933	.788	.938	.947

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Rancho Mirage
N/S: Monterey Avenue
E/W: Dick Kelly Drive
Weather: Sunny

File Name : RNMMODKPM
Site Code : 00000031
Start Date : 11/8/2012
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:30 PM		
+0 mins.	7	**230**	**237**	**57**	**10**	**67**	321	**39**	360
+15 mins.	**10**	211	221	48	9	57	319	28	347
+30 mins.	5	225	230	50	7	57	308	27	335
+45 mins.	3	228	231	56	9	65	**367**	23	**390**
Total Volume	25	894	919	211	35	246	1315	117	1432
% App. Total	2.7	97.3		85.8	14.2		91.8	8.2	
PHF	.625	.972	.969	.925	.875	.918	.896	.750	.918

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Rancho Mirage
N/S: Monterey Avenue
E/W: Dick Kelly Drive
Weather: Sunny

File Name : RNMMODKPM
Site Code : 00000031
Start Date : 11/8/2012
Page No : 1

Groups Printed- Passenger Vehicles

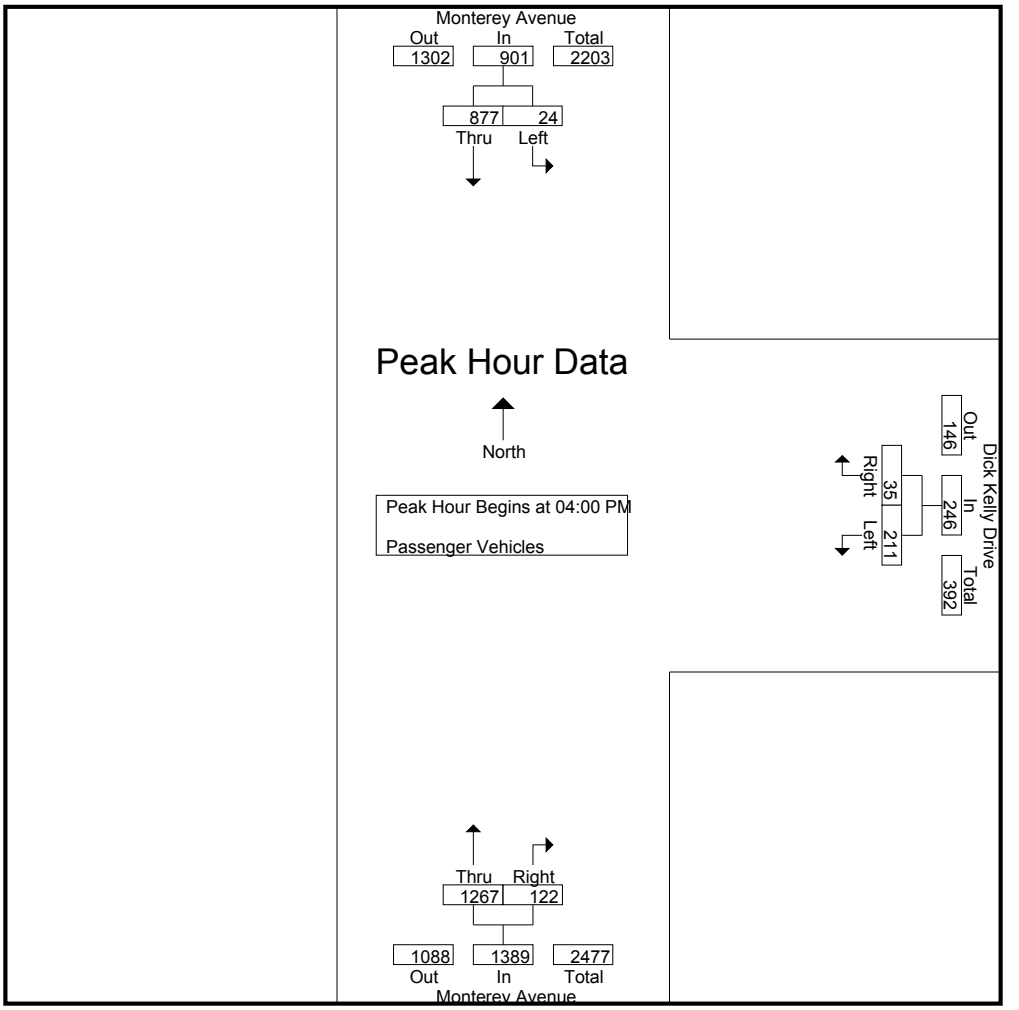
	Monterey Avenue Southbound			Dick Kelly Drive Westbound			Monterey Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	7	217	224	57	10	67	339	31	370	661
04:15 PM	10	210	220	48	9	57	304	24	328	605
04:30 PM	5	224	229	50	7	57	312	39	351	637
04:45 PM	2	226	228	56	9	65	312	28	340	633
Total	24	877	901	211	35	246	1267	122	1389	2536
05:00 PM	2	215	217	53	7	60	302	27	329	606
05:15 PM	4	200	204	40	16	56	365	23	388	648
05:30 PM	4	190	194	38	14	52	253	22	275	521
05:45 PM	2	195	197	39	5	44	241	18	259	500
Total	12	800	812	170	42	212	1161	90	1251	2275
Grand Total	36	1677	1713	381	77	458	2428	212	2640	4811
Apprch %	2.1	97.9		83.2	16.8		92	8		
Total %	0.7	34.9	35.6	7.9	1.6	9.5	50.5	4.4	54.9	

	Monterey Avenue Southbound			Dick Kelly Drive Westbound			Monterey Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	7	217	224	**57**	**10**	**67**	**339**	31	**370**	**661**
04:15 PM	**10**	210	220	48	9	57	304	24	328	605
04:30 PM	5	224	**229**	50	7	57	312	**39**	351	637
04:45 PM	2	**226**	228	56	9	65	312	28	340	633
Total Volume	24	877	901	211	35	246	1267	122	1389	2536
% App. Total	2.7	97.3		85.8	14.2		91.2	8.8		
PHF	.600	.970	.984	.925	.875	.918	.934	.782	.939	.959

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Rancho Mirage
N/S: Monterey Avenue
E/W: Dick Kelly Drive
Weather: Sunny

File Name : RNMMODKPM
Site Code : 00000031
Start Date : 11/8/2012
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	7	217	224	**57**	**10**	**67**	**339**	31	**370**
+15 mins.	**10**	210	220	48	9	57	304	24	328
+30 mins.	5	224	**229**	50	7	57	312	**39**	351
+45 mins.	2	**226**	228	56	9	65	312	28	340
Total Volume	24	877	901	211	35	246	1267	122	1389
% App. Total	2.7	97.3		85.8	14.2		91.2	8.8	
PHF	.600	.970	.984	.925	.875	.918	.934	.782	.939

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Rancho Mirage
N/S: Monterey Avenue
E/W: Dick Kelly Drive
Weather: Sunny

File Name : RNMMODKPM
Site Code : 00000031
Start Date : 11/8/2012
Page No : 1

Groups Printed- Large 2 Axle Vehicles

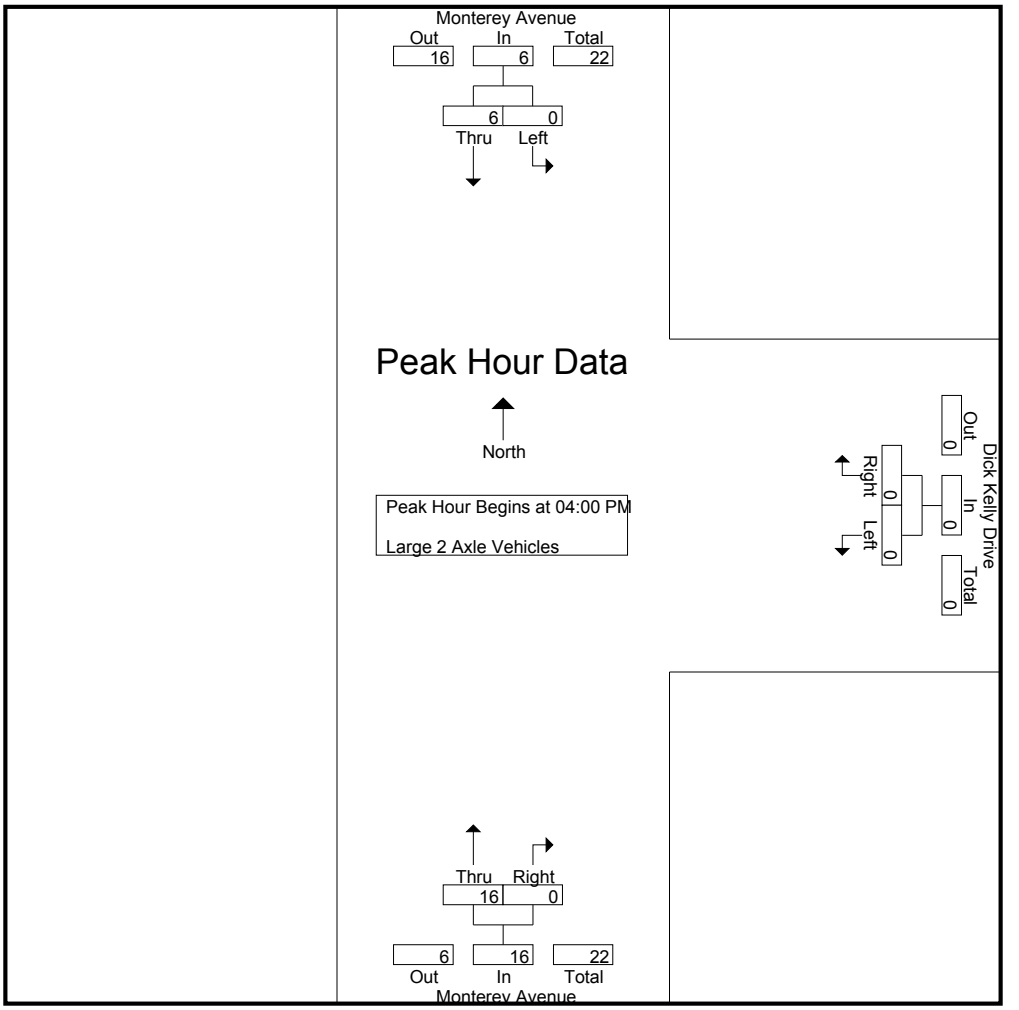
	Monterey Avenue Southbound			Dick Kelly Drive Westbound			Monterey Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	4	4	0	0	0	5	0	5	9
04:15 PM	0	0	0	0	0	0	2	0	2	2
04:30 PM	0	1	1	0	0	0	5	0	5	6
04:45 PM	0	1	1	0	0	0	4	0	4	5
Total	0	6	6	0	0	0	16	0	16	22
05:00 PM	0	2	2	0	0	0	3	0	3	5
05:15 PM	0	1	1	0	0	0	2	0	2	3
05:30 PM	0	2	2	0	0	0	2	0	2	4
05:45 PM	0	0	0	0	0	0	2	0	2	2
Total	0	5	5	0	0	0	9	0	9	14
Grand Total	0	11	11	0	0	0	25	0	25	36
Apprch %	0	100		0	0		100	0		
Total %	0	30.6	30.6	0	0	0	69.4	0	69.4	

	Monterey Avenue Southbound			Dick Kelly Drive Westbound			Monterey Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	**4**	**4**	0	0	0	**5**	0	**5**	**9**
04:15 PM	0	0	0	0	0	0	2	0	2	2
04:30 PM	0	1	1	0	0	0	5	0	5	6
04:45 PM	0	1	1	0	0	0	4	0	4	5
Total Volume	0	6	6	0	0	0	16	0	16	22
% App. Total	0	100		0	0		100	0		
PHF	.000	.375	.375	.000	.000	.000	.800	.000	.800	.611

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Rancho Mirage
N/S: Monterey Avenue
E/W: Dick Kelly Drive
Weather: Sunny

File Name : RNMMODKPM
Site Code : 00000031
Start Date : 11/8/2012
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	0	**4**	**4**	0	0	0	**5**	0	**5**
+15 mins.	0	0	0	0	0	0	2	0	2
+30 mins.	0	1	1	0	0	0	5	0	5
+45 mins.	0	1	1	0	0	0	4	0	4
Total Volume	0	6	6	0	0	0	16	0	16
% App. Total	0	100		0	0		100	0	
PHF	.000	.375	.375	.000	.000	.000	.800	.000	.800

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Rancho Mirage
N/S: Monterey Avenue
E/W: Dick Kelly Drive
Weather: Sunny

File Name : RNMMODKPM
Site Code : 00000031
Start Date : 11/8/2012
Page No : 1

Groups Printed- 3 Axle Vehicles

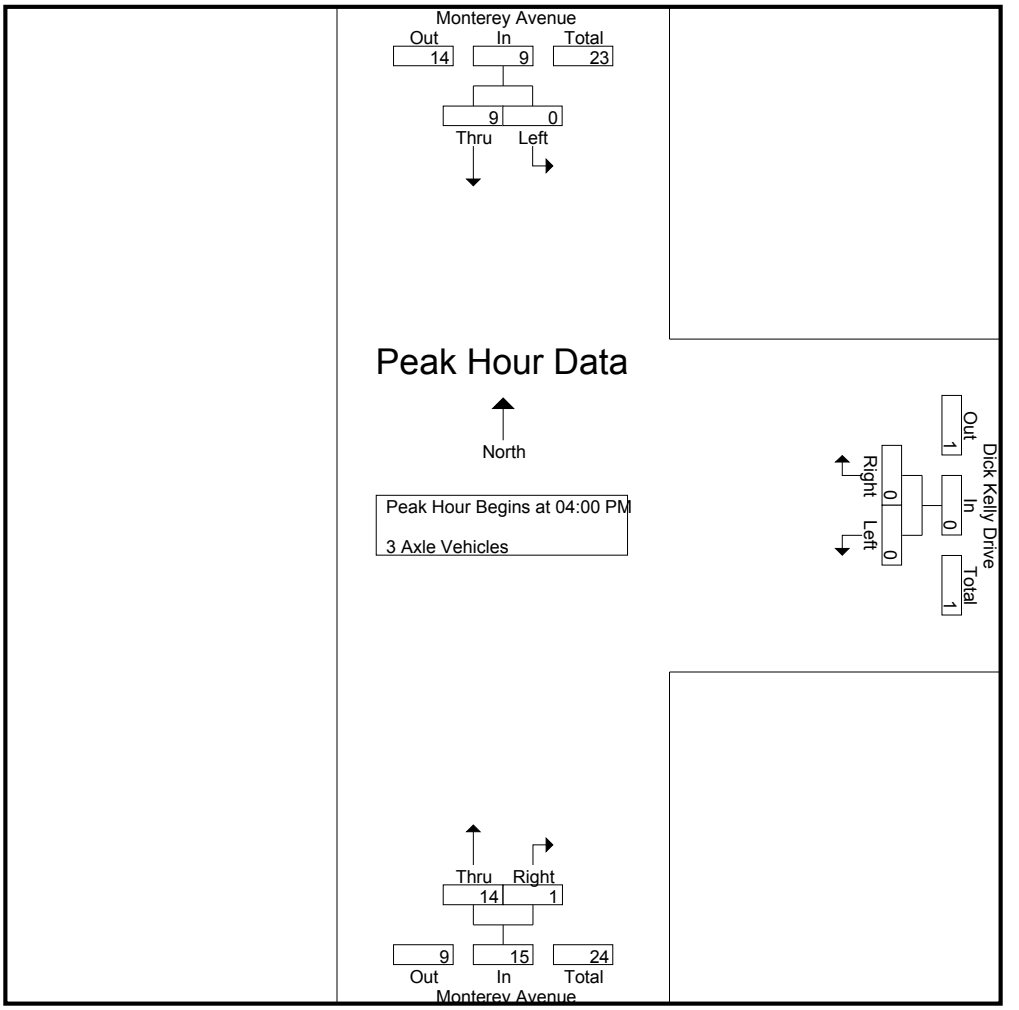
	Monterey Avenue Southbound			Dick Kelly Drive Westbound			Monterey Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	8	8	0	0	0	3	0	3	11
04:15 PM	0	1	1	0	0	0	4	1	5	6
04:30 PM	0	0	0	0	0	0	4	0	4	4
04:45 PM	0	0	0	0	0	0	3	0	3	3
Total	0	9	9	0	0	0	14	1	15	24
05:00 PM	0	0	0	0	0	0	3	0	3	3
05:15 PM	0	1	1	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	0	0	3	0	3	4
Grand Total	0	10	10	0	0	0	17	1	18	28
Apprch %	0	100		0	0		94.4	5.6		
Total %	0	35.7	35.7	0	0	0	60.7	3.6	64.3	

	Monterey Avenue Southbound			Dick Kelly Drive Westbound			Monterey Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	**8**	**8**	0	0	0	3	0	3	**11**
04:15 PM	0	1	1	0	0	0	**4**	**1**	**5**	6
04:30 PM	0	0	0	0	0	0	4	0	4	4
04:45 PM	0	0	0	0	0	0	3	0	3	3
Total Volume	0	9	9	0	0	0	14	1	15	24
% App. Total	0	100		0	0		93.3	6.7		
PHF	.000	.281	.281	.000	.000	.000	.875	.250	.750	.545

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Rancho Mirage
N/S: Monterey Avenue
E/W: Dick Kelly Drive
Weather: Sunny

File Name : RNMMODKPM
Site Code : 00000031
Start Date : 11/8/2012
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	0	**8**	**8**	0	0	0	3	0	3
+15 mins.	0	1	1	0	0	0	**4**	**1**	**5**
+30 mins.	0	0	0	0	0	0	4	0	4
+45 mins.	0	0	0	0	0	0	3	0	3
Total Volume	0	9	9	0	0	0	14	1	15
% App. Total	0	100		0	0		93.3	6.7	
PHF	.000	.281	.281	.000	.000	.000	.875	.250	.750

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Rancho Mirage
N/S: Monterey Avenue
E/W: Dick Kelly Drive
Weather: Sunny

File Name : RNMMODKPM
Site Code : 00000031
Start Date : 11/8/2012
Page No : 1

Groups Printed- 4+ Axle Trucks

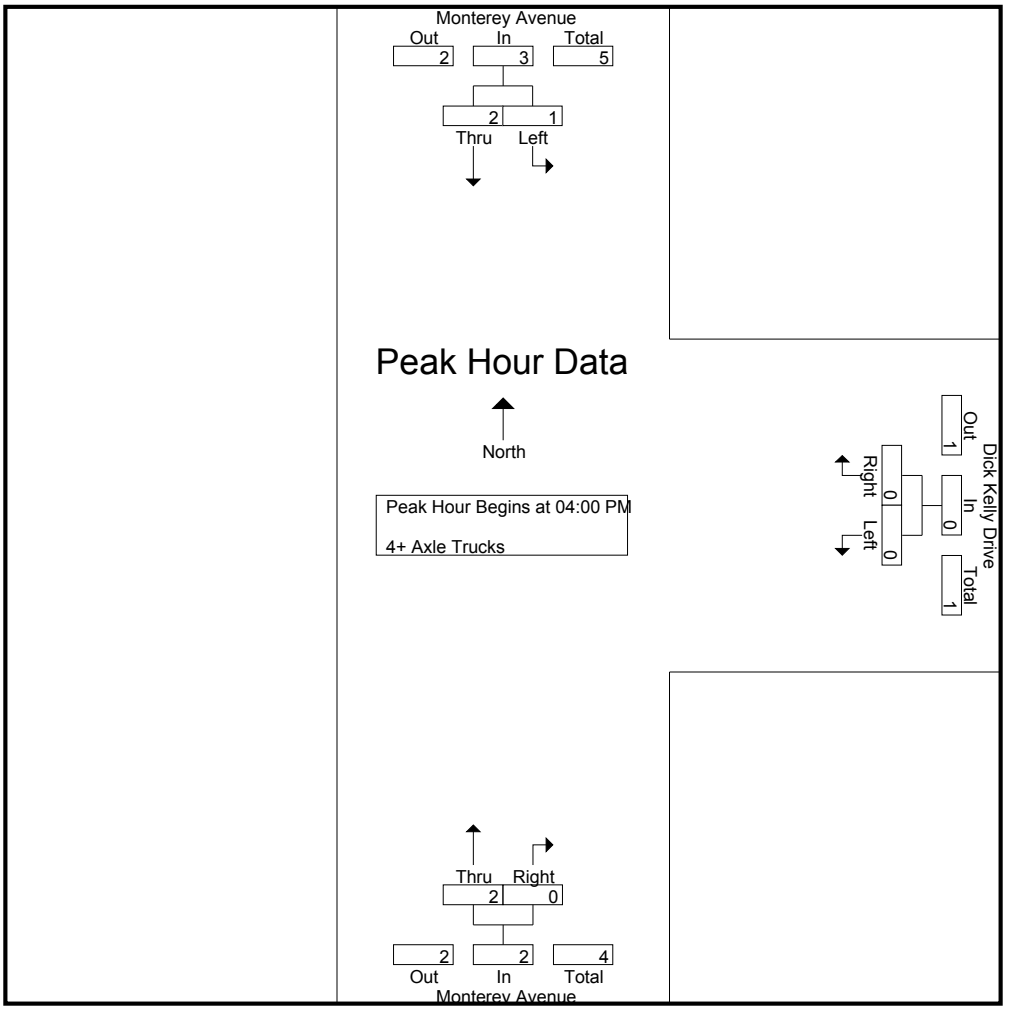
	Monterey Avenue Southbound			Dick Kelly Drive Westbound			Monterey Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	1	1	0	0	0	1	0	1	2
04:15 PM	0	0	0	0	0	0	1	0	1	1
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	1	1	2	0	0	0	0	0	0	2
Total	1	2	3	0	0	0	2	0	2	5
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	1	1	0	0	0	1
05:30 PM	0	1	1	0	0	0	1	0	1	2
05:45 PM	0	0	0	0	0	0	1	0	1	1
Total	0	1	1	0	1	1	2	0	2	4
Grand Total	1	3	4	0	1	1	4	0	4	9
Apprch %	25	75		0	100		100	0		
Total %	11.1	33.3	44.4	0	11.1	11.1	44.4	0	44.4	

	Monterey Avenue Southbound			Dick Kelly Drive Westbound			Monterey Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	**1**	1	0	0	0	**1**	0	**1**	**2**
04:15 PM	0	0	0	0	0	0	1	0	1	1
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	**1**	1	**2**	0	0	0	0	0	0	2
Total Volume	1	2	3	0	0	0	2	0	2	5
% App. Total	33.3	66.7		0	0		100	0		
PHF	.250	.500	.375	.000	.000	.000	.500	.000	.500	.625

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Rancho Mirage
N/S: Monterey Avenue
E/W: Dick Kelly Drive
Weather: Sunny

File Name : RNMMODKPM
Site Code : 00000031
Start Date : 11/8/2012
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	0	**1**	1	0	0	0	**1**	0	**1**
+15 mins.	0	0	0	0	0	0	1	0	1
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	**1**	1	**2**	0	0	0	0	0	0
Total Volume	1	2	3	0	0	0	2	0	2
% App. Total	33.3	66.7		0	0		100	0	
PHF	.250	.500	.375	.000	.000	.000	.500	.000	.500

Coachella Valley Association of Governments (CVAG)
Daily Counts

MONROE	S/O 54TH	3,208	2013	17.20%
		2,387	2011	-5.72%
		2,532	2010	-13.19%
		2,917	2009	-11.97%
		3,314	2008	
MONTEREY	S/O RAMON	10,650	2013	7.59%
		9,246	2011	-1.20%
		9,359	2010	13.74%
		8,228	2009	-16.95%
		9,908	2008	-4.35%
		10,359	2007	7.65%
		7,931	2003	-23.96%
		10,431	2002	35.13%
		7,719	2001	-13.30%
		8,904	2000	41.91%
		6,274	1999	
MONTEREY	N/O DINAH SHORE	44,125	2013	2.88%
		41,725	2011	2.26%
		40,800	2010	-1.46%
		41,405	2009	-2.85%
		42,620	2008	-0.97%
		43,039	2007	21.89%
		35,309	2006	4.72%
		29,700	2002	-8.83%
		32,578	2001	6.29%
		30,649	2000	14.69%
		26,722	1999	
MONTEREY	S/O DINAH SHORE	31,702	2013	0.99%
		31,085	2011	6.95%
		29,064	2010	2.71%
		28,296	2009	-17.20%
		34,177	2008	-3.05%
		35,253	2007	10.00%
		32,048	2006	-3.68%
		33,275	2005	6.52%
		31,236	2004	3.87%
		28,992	2002	

Coachella Valley Association of Governments
2013 Traffic Census Report

MONTEREY	N/O GERALD FORD	30,797	2013	4.62%
		28,190	2011	3.73%
		27,176	2010	-5.04%
		28,620	2009	-18.45%
		35,099	2008	7.42%
		32,673	2007	0.49%
		32,511	2006	-14.76%
		38,142	2005	17.83%
		32,368	2004	3.45%
		31,288	2003	4.96%
		29,809	2002	
MONTEREY	S/O GERALD FORD	25,531	2013	-3.50%
		27,454	2011	6.31%
		25,824	2010	-16.98%
		31,106	2009	-6.18%
		33,158	2008	-1.81%
		33,771	2007	5.16%
		32,111	2006	-17.77%
		39,051	2005	5.82%
		36,902	2004	
MONTEREY	N/O FRANK SINATRA	34,201	2013	9.76%
		28,617	2011	9.22%
		26,200	2010	-6.39%
		27,991	2009	-10.84%
		31,397	2008	-4.01%
		32,709	2007	-1.92%
		33,352	2006	-12.97%
		38,326	2005	0.14%
		38,270	2004	3.53%
		36,962	2003	10.38%
		24,329	1998	

Peak Hour to Daily Traffic Volume Relationship

EXISTING PEAK HOUR-TO-DAILY TRAFFIC VOLUME RELATIONSHIP

Roadway/Segment	LEG	CVAG 2013 ADT	AM Peak Hour Count (2012)	AM Ratio	PM Peak Hour Count (2012)	PM Ratio
Monterey Av.	s/o Dinah Shore Dr.	31,702	1,858	0.06	2,297	0.07
	n/o Gerald Ford Dr.	30,797	1,952	0.06	2,570	0.08
TOTAL		**62,499**	**3,810**		**4,867**	
			AVERAGE	6.10%		7.80%
			ADT CALCULATION FACTOR			**7.1940**

This Page Intentionally Left Blank

ATTACHMENT B

Existing (2012) Conditions
Intersection Operations Analysis Worksheets

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	78	9	0	689	37	12	1148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		5.0	5.0	4.0	5.0
Lane Util. Factor	1.00	1.00		0.91	1.00	1.00	0.95
Frt	1.00	0.85		1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	1615		5187	1615	1805	3610
Flt Permitted	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	1615		5187	1615	1805	3610
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	88	10	0	774	42	13	1290
RTOR Reduction (vph)	0	9	0	0	9	0	0
Lane Group Flow (vph)	88	1	0	774	33	13	1290
Turn Type	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	3		1	6		5	2
Permitted Phases		3			6		
Actuated Green, G (s)	9.3	9.3		95.5	95.5	2.2	101.7
Effective Green, g (s)	9.3	9.3		95.5	95.5	2.2	101.7
Actuated g/C Ratio	0.08	0.08		0.80	0.80	0.02	0.85
Clearance Time (s)	4.0	4.0		5.0	5.0	4.0	5.0
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	139	125		4127	1285	33	3059
v/s Ratio Prot	c0.05			0.15		0.01	c0.36
v/s Ratio Perm		0.00			0.02		
v/c Ratio	0.63	0.01		0.19	0.03	0.39	0.42
Uniform Delay, d1	53.7	51.1		2.9	2.6	58.2	2.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	6.7	0.0		0.1	0.0	2.8	0.4
Delay (s)	60.4	51.1		3.0	2.6	61.0	2.6
Level of Service	E	D		A	A	E	A
Approach Delay (s)	59.5			3.0			3.2
Approach LOS	E			A			A

Intersection Summary			
HCM 2000 Control Delay	5.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	211	35	0	1325	124	27	910
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		5.0	5.0	4.0	5.0
Lane Util. Factor	1.00	1.00		0.91	1.00	1.00	0.95
Frt	1.00	0.85		1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	1615		5187	1615	1805	3610
Flt Permitted	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	1615		5187	1615	1805	3610
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	222	37	0	1395	131	28	958
RTOR Reduction (vph)	0	32	0	0	37	0	0
Lane Group Flow (vph)	222	5	0	1395	94	28	958
Turn Type	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	3		1	6		5	2
Permitted Phases		3			6		
Actuated Green, G (s)	17.1	17.1		86.0	86.0	3.9	93.9
Effective Green, g (s)	17.1	17.1		86.0	86.0	3.9	93.9
Actuated g/C Ratio	0.14	0.14		0.72	0.72	0.03	0.78
Clearance Time (s)	4.0	4.0		5.0	5.0	4.0	5.0
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	257	230		3717	1157	58	2824
v/s Ratio Prot	c0.12			c0.27		c0.02	0.27
v/s Ratio Perm		0.00			0.06		
v/c Ratio	0.86	0.02		0.38	0.08	0.48	0.34
Uniform Delay, d1	50.3	44.3		6.6	5.1	57.1	3.9
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	23.9	0.0		0.3	0.1	2.3	0.3
Delay (s)	74.2	44.3		6.9	5.3	59.4	4.2
Level of Service	E	D		A	A	E	A
Approach Delay (s)	69.9			6.7			5.8
Approach LOS	E			A			A

Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

ATTACHMENT C

Existing (2012) Conditions
Queuing Analysis Worksheets

Lane Group	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	78	9	0	689	37	12	1148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	205		220	250	
Storage Lanes	1	1	1		1	1	
Taper Length (ft)	90		90			90	
Right Turn on Red		Yes			Yes		
Link Speed (mph)	45			55			55
Link Distance (ft)	1355			2143			1222
Travel Time (s)	20.5			26.6			15.1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	88	10	0	774	42	13	1290
Shared Lane Traffic (%)							
Lane Group Flow (vph)	88	10	0	774	42	13	1290
v/c Ratio	0.63	0.07		0.18	0.03	0.17	0.42
Control Delay	72.8	25.2		3.1	1.4	60.0	2.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	72.8	25.2		3.1	1.4	60.0	2.8
Queue Length 50th (ft)	67	0		28	0	10	90
Queue Length 95th (ft)	117	17		74	9	31	145
Internal Link Dist (ft)	1275			2063			1142
Turn Bay Length (ft)					220	250	
Base Capacity (vph)	240	224		4231	1325	120	3059
Starvation Cap Reductn	0	0		0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0
Reduced v/c Ratio	0.37	0.04		0.18	0.03	0.11	0.42

Intersection Summary	
Area Type:	Other

Lane Group	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	211	35	0	1325	124	27	910
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	205		220	250	
Storage Lanes	1	1	1		1	1	
Taper Length (ft)	90		90			90	
Right Turn on Red		Yes			Yes		
Link Speed (mph)	45			55			55
Link Distance (ft)	1355			2143			1222
Travel Time (s)	20.5			26.6			15.1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	222	37	0	1395	131	28	958
Shared Lane Traffic (%)							
Lane Group Flow (vph)	222	37	0	1395	131	28	958
v/c Ratio	0.86	0.14		0.37	0.11	0.32	0.34
Control Delay	80.8	15.4		6.8	1.2	64.3	4.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	80.8	15.4		6.8	1.2	64.3	4.3
Queue Length 50th (ft)	168	0		150	0	22	103
Queue Length 95th (ft)	#318	32		175	18	52	113
Internal Link Dist (ft)	1275			2063			1142
Turn Bay Length (ft)					220	250	
Base Capacity (vph)	262	265		3788	1215	120	2825
Starvation Cap Reductn	0	0		0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0
Reduced v/c Ratio	0.85	0.14		0.37	0.11	0.23	0.34

Intersection Summary

Area Type: Other

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

ATTACHMENT D

Long Range (2035)
Growth Reasonableness Review Summary

EXISTING (2012) VS LONG RANGE (2035) GROWTH COMPARISON

1: Monterey Avenue / Dick Kelly Drive

AM/PM Count Date: 11/8/2012

	AM PEAK HOUR PHF: 0.885												AM	PM PEAK HOUR PHF: 0.947											PM
	NBU*	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	TOTAL	NBU*	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	TOTAL
Existing 2012	0	689	37	12	1,148	0	0	0	0	78	0	9	1,973	0	1,325	124	27	910	0	0	0	0	211	0	35	2,632
2035 Volumes	55	1,189	281	93	1,622	36	41	2	34	101	100	103	3,657	202	1,791	280	249	1,476	132	220	135	182	285	105	230	5,287
Delta	55	500	244	81	474	36	41	2	34	23	100	94	1,684	202	466	156	222	566	132	220	135	182	74	105	195	2,655
Growth %	100%	73%	659%	675%	41%	100%	100%	100%	100%	29%	100%	1044%	85%	100%	35%	126%	822%	62%	100%	100%	100%	100%	35%	100%	557%	101%
2014 (Interpolate)	0	732	58	19	1,189	0	0	0	0	80	0	17	2,095	0	1,366	138	46	959	0	0	0	0	217	0	52	2,778

* NBU = NB U-Turn Only

	AM Peak Hour Link Volumes													PM Peak Hour Link Volumes										
	South Leg			North Leg			West Leg			East Leg				South Leg			North Leg			West Leg			East Leg		
	IN	OUT	Total	IN	OUT	Total	IN	OUT	Total	IN	OUT	Total		IN	OUT	Total	IN	OUT	Total	IN	OUT	Total	IN	OUT	Total	
Existing 2012	726	1,226	1,952	1,160	698	1,858	0	0	0	87	49	136		1,449	1,121	2,570	937	1,360	2,297	0	0	0	246	151	397	
2035 Volumes	1,525	1,757	3,282	1,751	1,333	3,084	77	191	268	304	376	680		2,273	1,943	4,216	1,857	2,241	4,098	537	439	976	620	664	1,284	
Delta	799	531	1,330	591	635	1,226	77	191	268	217	327	544		824	822	1,646	920	881	1,801	537	439	976	374	513	887	
Growth %	110%	43%	68%	51%	91%	66%	100%	100%	100%	249%	667%	400%		57%	73%	64%	98%	65%	78%	100%	100%	100%	152%	340%	223%	

	ADT			
	South Leg	North Leg	West Leg	East Leg
Existing 2012[1]	32,531	29,891	0	3,834
2035 ADT	59,600	61,800	6,700	13,400
Delta	27,069	31,909	6,700	9,566
Growth %	83%	107%	100%	250%
2014 (Interpolate)	34,885	32,666	0	4,666

	TRUCK (4%) ADT			
	South Leg	North Leg	West Leg	East Leg
Existing 2012[1]	1,301	1,196	0	153
2035 ADT	2,384	2,472	268	536
Delta	1,083	1,276	268	383
Growth %	83%	107%	100%	250%
2014 (Interpolate)	1,395	1,307	0	187

[1] Existing ADT Calc: ((AM+PM Peak Link Volume) * ADT Factor)

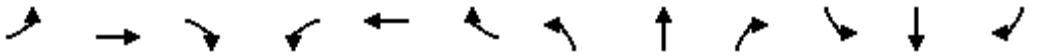
Existing ADT Factor = 7.1940

ADT Factor based on CVAG ADT (2013) and Peak hour Counts collected for Urban Crossroads (11/2012). See Existing-to-daily peak hour relationship calc.

THIS PAGE IS INTENTIONALLY LEFT BLANK

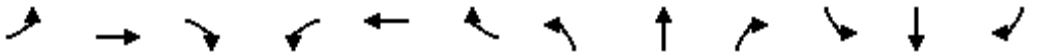
ATTACHMENT E

Long Range (2035) Without Widening Conditions
Intersection Operations Analysis Worksheets



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	2	34	101	100	103	55	1189	281	93	1622	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.92		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1615	1805	1755		1805	5187	1615	1805	3610	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	1900	1615	1805	1755		1805	5187	1615	1805	3610	1615
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	41	2	34	101	100	103	55	1189	281	93	1622	36
RTOR Reduction (vph)	0	0	31	0	37	0	0	0	122	0	0	14
Lane Group Flow (vph)	41	2	3	101	166	0	55	1189	159	93	1622	22
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4						6			2
Actuated Green, G (s)	7.1	10.2	10.2	14.2	17.3		7.6	67.8	67.8	11.8	72.0	72.0
Effective Green, g (s)	7.1	10.2	10.2	14.2	17.3		7.6	67.8	67.8	11.8	72.0	72.0
Actuated g/C Ratio	0.06	0.08	0.08	0.12	0.14		0.06	0.56	0.56	0.10	0.60	0.60
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	1.0	1.0	1.0	3.0		3.0	1.0	1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	106	161	137	213	253		114	2930	912	177	2166	969
v/s Ratio Prot	0.02	0.00		c0.06	c0.09		0.03	0.23		c0.05	c0.45	
v/s Ratio Perm			0.00						0.10			0.01
v/c Ratio	0.39	0.01	0.02	0.47	0.66		0.48	0.41	0.17	0.53	0.75	0.02
Uniform Delay, d1	54.4	50.3	50.3	49.4	48.5		54.3	14.7	12.6	51.4	17.4	9.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	0.0	0.0	0.6	6.0		3.2	0.4	0.4	1.3	2.4	0.0
Delay (s)	56.7	50.3	50.3	50.0	54.6		57.5	15.1	13.0	52.7	19.9	9.8
Level of Service	E	D	D	D	D		E	B	B	D	B	A
Approach Delay (s)		53.7			53.1			16.3			21.4	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	22.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

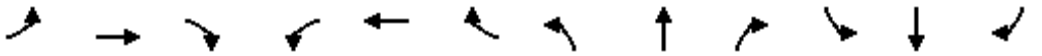


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	220	135	182	285	105	230	202	1791	280	249	1476	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.90		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1615	1805	1704		1805	5187	1615	1805	3610	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	1900	1615	1805	1704		1805	5187	1615	1805	3610	1615
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	220	135	182	285	105	230	202	1791	280	249	1476	132
RTOR Reduction (vph)	0	0	136	0	74	0	0	0	107	0	0	45
Lane Group Flow (vph)	220	135	46	285	261	0	202	1791	173	249	1476	87
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4						6			2
Actuated Green, G (s)	15.0	21.3	21.3	17.0	23.3		12.0	56.7	56.7	9.0	53.7	53.7
Effective Green, g (s)	15.0	21.3	21.3	17.0	23.3		12.0	56.7	56.7	9.0	53.7	53.7
Actuated g/C Ratio	0.12	0.18	0.18	0.14	0.19		0.10	0.47	0.47	0.08	0.45	0.45
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	1.0	1.0	1.0	3.0		3.0	1.0	1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	225	337	286	255	330		180	2450	763	135	1615	722
v/s Ratio Prot	0.12	0.07		c0.16	c0.15		c0.11	0.35		c0.14	c0.41	
v/s Ratio Perm			0.03						0.11			0.05
v/c Ratio	0.98	0.40	0.16	1.12	0.79		1.12	0.73	0.23	1.84	0.91	0.12
Uniform Delay, d1	52.3	43.7	41.8	51.5	46.0		54.0	25.5	18.7	55.5	31.0	19.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	53.1	0.3	0.1	91.7	12.1		103.7	2.0	0.7	407.2	9.5	0.3
Delay (s)	105.4	44.0	41.9	143.2	58.2		157.7	27.5	19.4	462.7	40.5	19.7
Level of Service	F	D	D	F	E		F	C	B	F	D	B
Approach Delay (s)		68.4			97.2			38.0			95.6	
Approach LOS		E			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	68.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	97.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

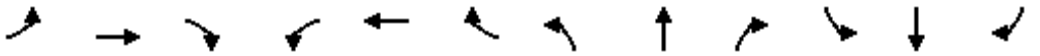
ATTACHMENT F

Long Range (2035) With Widening Conditions
Intersection Operations Analysis Worksheets



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	2	34	101	100	103	55	1189	281	93	1622	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.91	1.00	1.00	0.91	
Frt	1.00	1.00	0.85	1.00	0.92		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1900	1615	1805	1755		1805	5187	1615	1805	5170	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1900	1615	1805	1755		1805	5187	1615	1805	5170	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	41	2	34	101	100	103	55	1189	281	93	1622	36
RTOR Reduction (vph)	0	0	31	0	38	0	0	0	119	0	1	0
Lane Group Flow (vph)	41	2	3	101	165	0	55	1189	162	93	1657	0
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4						6			
Actuated Green, G (s)	7.1	10.2	10.2	14.2	17.3		8.0	69.0	69.0	10.6	71.6	
Effective Green, g (s)	7.1	10.2	10.2	14.2	17.3		8.0	69.0	69.0	10.6	71.6	
Actuated g/C Ratio	0.06	0.08	0.08	0.12	0.14		0.07	0.57	0.57	0.09	0.60	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	1.0	1.0	1.0	3.0		3.0	1.0	1.0	1.0	1.0	
Lane Grp Cap (vph)	106	161	137	213	253		120	2982	928	159	3084	
v/s Ratio Prot	0.02	0.00		c0.06	c0.09		0.03	0.23		c0.05	c0.32	
v/s Ratio Perm			0.00						0.10			
v/c Ratio	0.39	0.01	0.02	0.47	0.65		0.46	0.40	0.17	0.58	0.54	
Uniform Delay, d1	54.4	50.3	50.3	49.4	48.5		53.9	14.1	12.0	52.6	14.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.3	0.0	0.0	0.6	5.9		2.8	0.4	0.4	3.5	0.7	
Delay (s)	56.7	50.3	50.3	50.0	54.5		56.7	14.5	12.5	56.1	15.0	
Level of Service	E	D	D	D	D		E	B	B	E	B	
Approach Delay (s)		53.7			53.0			15.6			17.2	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	220	135	182	285	105	230	202	1791	280	249	1476	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.91	1.00	1.00	0.91	
Frt	1.00	1.00	0.85	1.00	0.90		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1900	1615	1805	1704		1805	5187	1615	1805	5123	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1805	1900	1615	1805	1704		1805	5187	1615	1805	5123	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	220	135	182	285	105	230	202	1791	280	249	1476	132
RTOR Reduction (vph)	0	0	151	0	75	0	0	0	107	0	7	0
Lane Group Flow (vph)	220	135	31	285	260	0	202	1791	173	249	1601	0
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4						6			
Actuated Green, G (s)	15.0	20.3	20.3	18.0	23.3		14.0	50.7	50.7	15.0	51.7	
Effective Green, g (s)	15.0	20.3	20.3	18.0	23.3		14.0	50.7	50.7	15.0	51.7	
Actuated g/C Ratio	0.12	0.17	0.17	0.15	0.19		0.12	0.42	0.42	0.12	0.43	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	1.0	1.0	1.0	3.0		3.0	1.0	1.0	1.0	1.0	
Lane Grp Cap (vph)	225	321	273	270	330		210	2191	682	225	2207	
v/s Ratio Prot	0.12	0.07		c0.16	c0.15		0.11	c0.35		c0.14	0.31	
v/s Ratio Perm			0.02						0.11			
v/c Ratio	0.98	0.42	0.11	1.06	0.79		0.96	0.82	0.25	1.11	0.73	
Uniform Delay, d1	52.3	44.6	42.2	51.0	46.0		52.7	30.6	22.4	52.5	28.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	53.1	0.3	0.1	70.1	11.8		51.0	3.5	0.9	91.5	2.1	
Delay (s)	105.4	44.9	42.3	121.1	57.8		103.7	34.1	23.3	144.0	30.4	
Level of Service	F	D	D	F	E		F	C	C	F	C	
Approach Delay (s)		68.8			86.9			39.0			45.6	
Approach LOS		E			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	50.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	93.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

ATTACHMENT G

Long Range (2035) Without Widening Conditions
Queuing Analysis Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	2	34	101	100	103	55	1189	281	93	1622	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	325		100	0		100	205		220	250		50
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	25			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			45			55			55	
Link Distance (ft)		807			1355			2143			1222	
Travel Time (s)		18.3			20.5			26.6			15.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	41	2	34	101	100	103	55	1189	281	93	1622	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	2	34	101	203	0	55	1189	281	93	1622	36
v/c Ratio	0.34	0.01	0.14	0.47	0.73		0.42	0.39	0.27	0.56	0.73	0.03
Control Delay	60.0	43.5	1.3	57.5	53.2		62.3	15.9	2.7	64.5	21.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.0	43.5	1.3	57.5	53.2		62.3	15.9	2.7	64.5	21.8	0.1
Queue Length 50th (ft)	31	1	0	77	120		41	183	0	69	471	0
Queue Length 95th (ft)	67	9	0	132	191		84	272	47	124	#770	0
Internal Link Dist (ft)		727			1275			2063			1142	
Turn Bay Length (ft)	325		100				205		220	250		50
Base Capacity (vph)	210	506	490	266	528		165	3030	1060	210	2236	1032
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.00	0.07	0.38	0.38		0.33	0.39	0.27	0.44	0.73	0.03

Intersection Summary

Area Type: Other

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	220	135	182	285	105	230	202	1791	280	249	1476	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	325		100	0		100	205		220	250		50
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	25			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			45			55			55	
Link Distance (ft)		807			1355			2143			1222	
Travel Time (s)		18.3			20.5			26.6			15.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	220	135	182	285	105	230	202	1791	280	249	1476	132
Shared Lane Traffic (%)												
Lane Group Flow (vph)	220	135	182	285	335	0	202	1791	280	249	1476	132
v/c Ratio	1.05	0.40	0.42	1.19	0.83		1.22	0.79	0.34	1.19	0.88	0.17
Control Delay	126.4	45.4	8.3	163.2	49.9		188.4	33.1	9.3	167.0	37.8	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	126.4	45.4	8.3	163.2	49.9		188.4	33.1	9.3	167.0	37.8	9.7
Queue Length 50th (ft)	~185	93	0	~265	186		~192	427	39	~232	533	21
Queue Length 95th (ft)	#345	141	57	#440	270		#345	#600	115	#398	#798	66
Internal Link Dist (ft)		727			1275			2063			1142	
Turn Bay Length (ft)	325		100				205		220	250		50
Base Capacity (vph)	210	506	564	240	548		165	2277	817	210	1674	793
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.05	0.27	0.32	1.19	0.61		1.22	0.79	0.34	1.19	0.88	0.17

Intersection Summary

Area Type: Other

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

ATTACHMENT H

Long Range (2035) With Widening Conditions
Queuing Analysis Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	2	34	101	100	103	55	1189	281	93	1622	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	325		100	0		100	205		220	250		50
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	25			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			45			55			55	
Link Distance (ft)		807			1355			2143			1222	
Travel Time (s)		18.3			20.5			26.6			15.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	41	2	34	101	100	103	55	1189	281	93	1622	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	2	34	101	203	0	55	1189	281	93	1658	0
v/c Ratio	0.34	0.01	0.14	0.47	0.73		0.40	0.39	0.26	0.63	0.52	
Control Delay	60.0	43.5	1.3	57.6	53.0		60.4	15.2	2.7	71.2	16.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	60.0	43.5	1.3	57.6	53.0		60.4	15.2	2.7	71.2	16.5	
Queue Length 50th (ft)	31	1	0	77	120		41	175	0	71	270	
Queue Length 95th (ft)	67	9	0	132	190		82	272	47	123	412	
Internal Link Dist (ft)		727			1275			2063			1142	
Turn Bay Length (ft)	325		100				205		220	250		
Base Capacity (vph)	225	506	490	290	543		210	3085	1074	225	3189	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	0.18	0.00	0.07	0.35	0.37		0.26	0.39	0.26	0.41	0.52	

Intersection Summary

Area Type: Other

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	220	135	182	285	105	230	202	1791	280	249	1476	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	325		100	0		100	205		220	250		50
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	25			90			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			45			55			55	
Link Distance (ft)		807			1355			2143			1222	
Travel Time (s)		18.3			20.5			26.6			15.1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	220	135	182	285	105	230	202	1791	280	249	1476	132
Shared Lane Traffic (%)												
Lane Group Flow (vph)	220	135	182	285	335	0	202	1791	280	249	1608	0
v/c Ratio	0.98	0.42	0.43	1.06	0.83		0.96	0.82	0.35	1.11	0.73	
Control Delay	107.3	46.8	8.6	119.2	49.5		106.1	35.5	10.4	139.8	31.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	107.3	46.8	8.6	119.2	49.5		106.1	35.5	10.4	139.8	31.6	
Queue Length 50th (ft)	172	94	0	~241	185		158	441	44	~220	368	
Queue Length 95th (ft)	#332	143	57	#415	269		#309	#626	124	#386	489	
Internal Link Dist (ft)		727			1275			2063			1142	
Turn Bay Length (ft)	325		100				205		220	250		
Base Capacity (vph)	225	506	564	270	562		210	2190	789	225	2214	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	0.98	0.27	0.32	1.06	0.60		0.96	0.82	0.35	1.11	0.73	

Intersection Summary

Area Type: Other

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

ATTACHMENT I

Opening Year 2014 Without Project
Intersection Operations Analysis Worksheets

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	80	17	0	732	58	19	1189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		5.0	5.0	4.0	5.0
Lane Util. Factor	1.00	1.00		0.91	1.00	1.00	0.95
Frt	1.00	0.85		1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	1615		5187	1615	1805	3610
Flt Permitted	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	1615		5187	1615	1805	3610
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	90	19	0	822	65	21	1336
RTOR Reduction (vph)	0	18	0	0	13	0	0
Lane Group Flow (vph)	90	1	0	822	52	21	1336
Turn Type	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	3		1	6		5	2
Permitted Phases		3			6		
Actuated Green, G (s)	9.4	9.4		95.1	95.1	2.5	101.6
Effective Green, g (s)	9.4	9.4		95.1	95.1	2.5	101.6
Actuated g/C Ratio	0.08	0.08		0.79	0.79	0.02	0.85
Clearance Time (s)	4.0	4.0		5.0	5.0	4.0	5.0
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	141	126		4110	1279	37	3056
v/s Ratio Prot	c0.05			0.16		0.01	c0.37
v/s Ratio Perm		0.00			0.03		
v/c Ratio	0.64	0.01		0.20	0.04	0.57	0.44
Uniform Delay, d1	53.7	51.0		3.1	2.7	58.2	2.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	6.8	0.0		0.1	0.1	11.3	0.5
Delay (s)	60.4	51.0		3.2	2.7	69.6	2.7
Level of Service	E	D		A	A	E	A
Approach Delay (s)	58.8			3.1			3.7
Approach LOS	E			A			A

Intersection Summary			
HCM 2000 Control Delay	6.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	217	52	0	1366	138	46	959
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		5.0	5.0	4.0	5.0
Lane Util. Factor	1.00	1.00		0.91	1.00	1.00	0.95
Frt	1.00	0.85		1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	1615		5187	1615	1805	3610
Flt Permitted	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	1615		5187	1615	1805	3610
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	228	55	0	1438	145	48	1009
RTOR Reduction (vph)	0	47	0	0	43	0	0
Lane Group Flow (vph)	228	8	0	1438	102	48	1009
Turn Type	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	3		1	6		5	2
Permitted Phases		3			6		
Actuated Green, G (s)	16.7	16.7		84.7	84.7	5.6	94.3
Effective Green, g (s)	16.7	16.7		84.7	84.7	5.6	94.3
Actuated g/C Ratio	0.14	0.14		0.71	0.71	0.05	0.79
Clearance Time (s)	4.0	4.0		5.0	5.0	4.0	5.0
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	251	224		3661	1139	84	2836
v/s Ratio Prot	c0.13			c0.28		c0.03	0.28
v/s Ratio Perm		0.00			0.06		
v/c Ratio	0.91	0.03		0.39	0.09	0.57	0.36
Uniform Delay, d1	50.9	44.7		7.2	5.5	56.0	3.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	32.6	0.0		0.3	0.2	5.7	0.4
Delay (s)	83.5	44.7		7.5	5.7	61.7	4.2
Level of Service	F	D		A	A	E	A
Approach Delay (s)	75.9			7.3			6.8
Approach LOS	E			A			A

Intersection Summary			
HCM 2000 Control Delay	13.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

ATTACHMENT J

Opening Year 2014 With Project
Intersection Operations Analysis Worksheets

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	80	17	0	732	58	19	1189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		5.0	5.0	4.0	5.0
Lane Util. Factor	1.00	1.00		0.91	1.00	1.00	0.91
Frt	1.00	0.85		1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	1615		5187	1615	1805	5187
Flt Permitted	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	1615		5187	1615	1805	5187
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	90	19	0	822	65	21	1336
RTOR Reduction (vph)	0	18	0	0	13	0	0
Lane Group Flow (vph)	90	1	0	822	52	21	1336
Turn Type	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	3		1	6		5	2
Permitted Phases		3			6		
Actuated Green, G (s)	9.4	9.4		95.1	95.1	2.5	101.6
Effective Green, g (s)	9.4	9.4		95.1	95.1	2.5	101.6
Actuated g/C Ratio	0.08	0.08		0.79	0.79	0.02	0.85
Clearance Time (s)	4.0	4.0		5.0	5.0	4.0	5.0
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	141	126		4110	1279	37	4391
v/s Ratio Prot	c0.05			0.16		c0.01	c0.26
v/s Ratio Perm		0.00			0.03		
v/c Ratio	0.64	0.01		0.20	0.04	0.57	0.30
Uniform Delay, d1	53.7	51.0		3.1	2.7	58.2	1.9
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	6.8	0.0		0.1	0.1	11.3	0.2
Delay (s)	60.4	51.0		3.2	2.7	69.6	2.1
Level of Service	E	D		A	A	E	A
Approach Delay (s)	58.8			3.1			3.1
Approach LOS	E			A			A

Intersection Summary			
HCM 2000 Control Delay	5.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	34.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	217	52	0	1366	138	46	959
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		5.0	5.0	4.0	5.0
Lane Util. Factor	1.00	1.00		0.91	1.00	1.00	0.91
Frt	1.00	0.85		1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	1615		5187	1615	1805	5187
Flt Permitted	0.95	1.00		1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	1615		5187	1615	1805	5187
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	228	55	0	1438	145	48	1009
RTOR Reduction (vph)	0	47	0	0	43	0	0
Lane Group Flow (vph)	228	8	0	1438	102	48	1009
Turn Type	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	3		1	6		5	2
Permitted Phases		3			6		
Actuated Green, G (s)	16.7	16.7		84.7	84.7	5.6	94.3
Effective Green, g (s)	16.7	16.7		84.7	84.7	5.6	94.3
Actuated g/C Ratio	0.14	0.14		0.71	0.71	0.05	0.79
Clearance Time (s)	4.0	4.0		5.0	5.0	4.0	5.0
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	251	224		3661	1139	84	4076
v/s Ratio Prot	c0.13			c0.28		c0.03	0.19
v/s Ratio Perm		0.00			0.06		
v/c Ratio	0.91	0.03		0.39	0.09	0.57	0.25
Uniform Delay, d1	50.9	44.7		7.2	5.5	56.0	3.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	32.6	0.0		0.3	0.2	5.7	0.1
Delay (s)	83.5	44.7		7.5	5.7	61.7	3.6
Level of Service	F	D		A	A	E	A
Approach Delay (s)	75.9			7.3			6.2
Approach LOS	E			A			A

Intersection Summary			
HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			